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МАРІУПОЛЬСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ

ENGLISN FOR SPECIFIC PURPOSES

PART I

НАВЧАЛЬНО-МЕТОДИЧНИЙ ПОСІБНИК З ОРГАНІЗАЦІЇ АУДИТОРНОЇ ТА САМОСТІЙНОЇ РОБОТИ СТУДЕНТІВ ОС «БАКАЛАВР» 1 РОКУ ДЕННОЇ ТА ЗАОЧНОЇ ФОРМ НАВЧАННЯ СПЕЦІАЛЬНОСТІ 053- ПРАКТИЧНА ПСИХОЛОГІЯ

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ENGLISN FOR SPECIFIC PURPOSES. Part I*:* Навчально-методичний посібник з організації аудиторної та самостійної роботи студентів ОКР «Бакалавр» 1 року денної форми навчання спеціальності «Практична психологія» / Укл**. О.Б.Стуліка**. – МДУ, 2018. – 148 стор.

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Рекомендовано до друку рішенням кафедри практичної психології Маріупольського державного університету (протокол № від)

Навчально-методичний посібник призначено для організації аудиторної та самостійної роботи з навчання професійно-орієнтованої лексики студентів 1 курсу спеціальності 053 Практична психологія. Посібник складається з шости розділів та включає базові теми з загальної психології.

Рекомендовано студентам вищих навчальних закладів.

CONTENTS

PART I. READING ACTIVITIES

PART II. VOCABULARY STUDY

PREFACE

This book has been written for people whose first language is not English, and who need to use English in connection to the sphere of psychology. It covers language useful for future psychologists who are planning to work in a professional sphere. There is a strong focus on the language needed to communicate on psychological topics, discuss professionally-oriented problems and plan projects. It does not cover rarely-used terms used by psychologists. All the language in the book is intended to be accessible to intermediate level students and above.

The book contains four units which consist of twenty professionally-oriented texts devoted to the main topics of general psychology as the basic branch of psychological science. The number of texts given is much greater than the number of lessons during the first year of study because the texts are of different levels of difficulty and texts for self-study work are also considered here. The structure and the vocabulary are arranged by topic. There is also an index to help student find the pages. The new words and phrases should be written at the glossary that means that the students themselves compose their vocabulary. The book helps the learners to review this language regularly so that it becomes part of their active vocabulary. A good general dictionary will be very helpful, providing pronunciation guides and more contexts. The self-study work is given in the overall context thus making it possible to study according to the students' own speed and abilities.

UNIT 1. PSYCHOLOGY BASICS. Before you delve into studying psychology, it's important to learn some basic information such as the different branches of psychology, theoretical perspectives, history and research methods. Whether you are new to the subject or just want to brush up on your knowledge, these articles can help you get started on your studies.

TEXT 1. WHAT IS PSYCHOLOGY?

What exactly *is* psychology? While it may seem like a very basic question, it is one of the most common questions asked by students new to the study of psychology. During your first lecture of an introductory psychology class, your instructor might spend some time going around the room asking students to explain what they think psychology involves.

Unfortunately, such misconceptions about psychology abound and part of the confusion stems from stereotyped portrayals of psychologists in popular media as well as the diverse careers paths of those holding psychology degrees.

The simplest definition of psychology is that it is the study of the mind and behavior. Research in psychology seeks to understand and explain thought, emotion, and behavior. Applications of psychology include mental health treatment, performance enhancement, self-help, ergonomics, and many other areas affecting health and daily life. It's difficult to capture everything that psychology encompasses in just a brief definition, but topics such as development, personality, thoughts, feelings, emotions, motivations, and social behaviors represent just a portion of what psychology seeks to understand and explain.

Let's take a closer look at this common question: **What Is Psychology?**

There's a lot of confusion out there about psychology. According to some popular television programs and movies, psychologists are super-sleuths that can

use their understanding of the human mind to solve crimes and predict a criminal's next move. Other traditional depictions present the psychologist as a gray and bearded older gentleman, seated in a stately office lined with books, who spends his days listening to clients ramble on about their difficult childhoods.

So what's the truth about psychology? The fact is that there is a little bit of truth in these stereotypical portrayals, but there is a lot more to psychology than you might initially think. There is a tremendous diversity in psychology careers, and it is perhaps this enormous range of career paths that contributes to some of the misconceptions about psychology and what psychologists do. Sure, there are psychologists who help solve crimes, and there are plenty of professionals who help people deal with mental health issues. But did you know that there are also psychologists who contribute to creating healthier workplaces or that design and implement public health programs? Or that there are others psychologists who investigate topics such as airplane safety, computer design, and military life?

Answer: **Psychology** is both an applied and academic field that studies the human mind and behavior. Research in psychology seeks to understand and explain how we think, act and feel. As most people already realize, a large part of psychology is devoted to the diagnosis and treatment of mental health issues, but that's just the tip of the iceberg when it comes to applications for psychology. In addition to mental health, psychology can be applied to a variety of issues that impact health and daily life including performance enhancement, self-help, ergonomics, motivation, productivity, and much more.

Early Psychology. Psychology evolved out of both philosophy and biology. Discussions of these two subjects date as far back as the early Greek thinkers including Aristotle and Socrates. The word psychology is derived from the Greek word *psyche*, literally meaning 'life' or 'breath.' Derived meanings of the word include 'soul' or 'self.'

A Separate Science. The emergence of psychology as a separate and independent field of study truly came about when Wilhelm Wundt established the first experimental psychology lab in Leipzig, Germany in 1879. Wundt's work was

focused on describing the structures that compose the mind. This perspective relied heavily on the analysis of sensations and feelings through the use of introspection, an extremely subjective process. Wundt believed that properly trained individuals would be able to identify accurately the mental processes that accompanied feelings, sensations and thoughts.

Schools of Thought. Throughout psychology's history, some different schools of thought have thought have formed to explain human thought and behavior. These schools of thought often rise to dominance for a period. While these schools of thought are sometimes perceived as competing forces, each perspective has contributed to our understanding of psychology. The following are some of the major schools of thought in psychology: Structuralism, Functionalism, Psychoanalysis, Behaviorism, Humanism, Cognitivism

Psychology Today. Today, psychologists prefer to use more objective scientific methods to understand, explain, and predict human behavior. Psychological studies are highly structured, beginning with a hypothesis that is then empirically tested. The discipline has two major areas of focus: academic psychology and applied psychology. Educational psychology focuses on the study of different sub-topics within psychology including personality, social behavior, and human development. These psychologists conduct basic research that seeks to expand our theoretical knowledge while other researchers do applied research that attempts to solve everyday problems.

Applied psychology focuses on the use of different psychological principles to solve real world problems. Examples of applied areas of psychology include forensic psychology, ergonomics, and industrial-organizational psychology. Many other psychologists work as therapists, helping people overcome mental, behavioral, and emotional disorders.

Psychology Research Methods. As psychology moved away from its philosophical roots, psychologists began to employ more and more scientific methods to study human behavior. Contemporary researchers use a variety of

scientific techniques including experiments, correlational studies longitudinal research, and others to test, explain, and predict behavior.

Areas of Psychology. Psychology is a broad and diverse field. Some different subfields and specialty areas have emerged. The following are some of the major areas of research and application within psychology: Abnormal Psychology, Biological Psychology, Clinical Psychology, Cognitive Psychology, Comparative Psychology, Developmental Psychology, Forensic Psychology, Industrial-Organizational Psychology, Personality Psychology, School Psychology, Social Psychology

TEXT 2. *PSYCHE AND SCIENCE = PSYCHOLOGY*

Welcome to psychology! You are invited to learn about one of the life's most interesting subjects – psychology. You enrolled in psychology course knowing that it had something to do with people. Botany is about plants, history is about the past, and psychology is about people. You may even know someone who is a psychologist or you may have some knowledge about how psychology is put to use in society. But what exactly is psychology? What will you learn about people and what use is it?

The earliest origins of psychology are in the writings of the ancient Greek scholars, particularly those of Aristotle. Aristotle was born in 384 B.C. in the area of northern Greece. He trained to be a royal physician, but Aristotle was more interested in the pursuit of knowledge for the sake of knowledge – a pursuit that led him to become one of the ancient Greece's most famous and influential philosophers.

In Aristotle's day, philosophy was a much broader field than it is today, then compressing the modern fields of science and maths. The topics of his writings were wide-ranging, but most of them had a common theme – life. Aristotle was interested in learning everything he could about living things. He and his students collected and dissected plants and animals in the attempt to see how their organs

sustained life. They studied the process of reproduction to see how life was recreated in each generation. And they studied the everyday actions of living people as they reasoned, remembered, learned and attempted to influence one another.

It was Aristotle's habit in his later years to discuss philosophy with his students as they strolled the covered walks of his school, the Lyceum. Imagine that they were talking about his favourite subject – the nature of life itself.

Aristotle used the term psyche to refer to the essence of life. The term is translated to mean "soul" or "mind", but it's closely linked in meaning with the word "breath". Aristotle believed that psyche escaped in the last dying breath that was exhaled. Modern psychologists no longer speak of Aristotle's "breath of life", but they are interested in the same action, thoughts and feelings of human beings. Indeed the term "psychology" comes from Aristotle's word "psyche" + the Greek word "logos" meaning "the study of".

TEXT 3. PSYCHOLOGY DEFINED

Literally, the word „psychology" means the «science of the mind», but psychologists have never been satisfied with this definition.

Most contemporary psychologists would define psychology as the science of the behaviour of organisms. By "behaviour" they mean, first of all, activities or processes that can be observed objectively — both the isolated reactions of muscles, glands and other parts of the organism and the organized, goal-directed patterns of reaction that characterize the organism as a whole. Psychologists also interpret «behaviour» to include internal processes — thinking, emotional reactions and the like — which one person cannot observe directly in another but which can be inferred from observation of external behaviour.

Although psychology has been concerned primarily with the behaviour of human individuals and groups, it has also dealt with the study of animal behaviour.

Animals have long held an important place in psychological laboratories as experimental subjects.

Since life span of most laboratory animals is shorter than that of people, it is possible to control genetic factors more easily than with people. Another advantage of studying animals is that animal behaviour is simpler than human behaviour and so it can be more easily investigated. Although great care is always necessary in interpreting human behaviour in the light of findings from animal experiments, animal psychology has greatly contributed to our study of human beings.

TEXT 4. WHAT'S THE DIFFERENCE BETWEEN A PSYCHOLOGIST AND A PSYCHIATRIST?

The question sounds like the setup for a joke, but it's an important difference to understand whether you are a student of psychology or a consumer searching for a mental health provider. The terms "psychologist" and "psychiatrist" are often used interchangeably to describe anyone who provides therapy services. While psychologists and psychiatrists both conduct psychotherapy and research, there are significant differences between the two professions.

Education, Training, and Credentials

The simplest answer lies in the educational background required for each profession. A psychiatrist has a degree in medicine and a psychologist has a doctoral-level degree in psychology.

Psychologists receive graduate training in psychology and pursue either a Ph.D. (Doctor of Philosophy) or Psy.D. (Doctor of Psychology) in clinical or counseling psychology. Doctorate programs typically take five to seven years to complete and most states require an additional one or two years long internship in order to gain licensure. Other states require an additional year or two of supervised practice before granting full licensure.

The title of "psychologist" can only be used by an individual who has completed the above education, training, and state licensure. Informal titles such as

"counselor" or "therapist" are often used as well, but other mental health care professionals such as licensed social workers can also claim these titles.

Psychiatrists are physicians that have specific training in the assessment, diagnosis, treatment, and prevention of mental illnesses. In order to become a psychiatrist, students first earn an undergraduate degree before they attend medical school and receive an M.D. After finishing their medical training, they also complete an additional four years of residency training in mental health. Some also receive additional training in a specific area of interest.

A second important distinction between the two careers is that psychiatrists can prescribe medications, while in most states psychologists cannot.

Which is Better?

If you are considering a career as a therapist, you will need to determine which career path is best for you. Are you interested in conducting psychotherapy, administering psychological tests, and conducting research? If so, a career as a psychologist may be the best choice for you.

On the other hand, if you have an interest in medicine and want to be able to prescribe medications to your patients, a career in psychiatry might be your ideal choice.

If you do not want to invest five to eight years in graduate training, consider pursuing a career as a licensed social worker or counselor. These professionals are also qualified to provide mental health services depending up training and experience. Both social work and counseling typically require two or three years of graduate study.

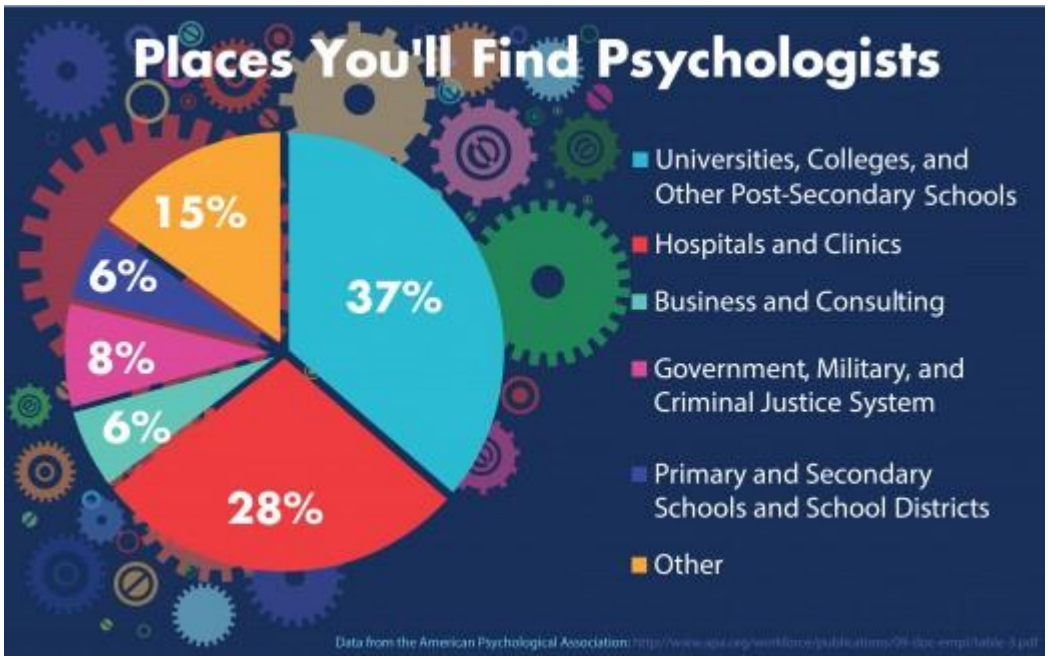
Psychiatric nursing is another great career option for students interested in medicine. Advanced Psychiatric Nurses hold a master's degree or higher in psychiatric-mental health nursing and are able to assess patients, diagnose disorders, provide psychotherapy, and prescribe medications.

TEXT 5. RELATIONSHIP BETWEEN PSYCHOLOGY AND PSYCHIATRY

What is the difference between a psychologist and a psychiatrist? Although there are many similarities, there are numerous differences as well.

A *psychiatrist* has completed medical school and has obtained the M.D (doctor of medicine) degree, usually has done an internship in general medicine, and has completed residency training in psychiatry. Although some psychiatrists work as researchers, most are practitioners in clinics who see patients with emotional or behavioral problems. Because of their medical training, psychiatrists are licensed to prescribe drugs and other medical treatments such as electroconvulsive shock therapy.

A *psychologist* has been trained in psychology and applied fields, but did not attend medical school. Psychology is a much broader field than psychiatry and contains many different specialty areas. Psychologists have attended graduate school in psychology and have obtained the degree of Ph.D. (doctor of philosophy) or Psy.D (doctor of psychology). Because they do not have medical training, they do not prescribe drugs or other medical treatments.



TEXT 6. 10 THINGS YOU NEED TO KNOW ABOUT PSYCHOLOGY

The following are just a few of the important things you need to know about psychology. Once you learn these facts, you will be better prepared to explore psychology in greater depth.

1. Psychology Is the Study of the Mind and Behavior

Psychology is the study of the mental processes and behavior. The term psychology comes from the Greek word *psyche* meaning "breath, spirit, soul" and the *logia* meaning "study of." Psychology emerged from biology and philosophy and is closely linked to other disciplines including sociology, medicine, linguistics and anthropology.

2. Psychology Uses Scientific Methods

One of the most common myths about psychology is that it is just "common sense." Unlike common sense, psychology relies on scientific methods to investigate questions and arrive at conclusions. Psychologists use a range of techniques to study the human mind and behavior, including naturalistic observation, experiments, case studies and questionnaires.

3. Psychologists Take Many Different Perspectives

Topics and questions in psychology can be looked at in a number of different ways. For example, psychologists may look at something like violence from a number of different perspectives. Some psychologists may look at how biological influences contribute to violence, while other psychologists might look at factors like culture, family relationships, social pressure and situational variables influence violence. Some of the major perspectives in psychology include the: Biological perspective, Cognitive perspective, Behavioral perspective, Evolutionary perspective, Humanistic perspective.

4. Psychology Has Many Subfields

There are many different branches of psychology. Introductory students often explore the basics of these various specialty areas, but further exploration of each individual field may depend on what course of study you select. Some of the

biggest subfields within psychology are clinical psychology, personality psychology, cognitive psychology, developmental psychology and social psychology.

5. Psychology Is Not Just About Therapy

When you think of psychology, do you envision a therapist with a notepad jotting down ideas as a client recounts childhood experiences? While therapy is certainly a big part of psychology, it is not the only thing that psychologists do. In fact, some psychologists don't work in the field of mental health at all. Psychology encompasses other areas including teaching, research and consulting. Psychologists work in a wide variety of settings, including colleges and universities, private corporations, hospitals, government offices

6. Psychology Is All Around You

Psychology is not just an academic subject that exists only in classrooms, research labs and mental health offices. The principles of psychology can be seen all around you in everyday situations. The television commercials and print ads you see every day rely on psychology to develop marketing messages that influence and persuade people to purchase the advertised products. The websites you visit on a regular basis utilize psychology to understand how people read, use and interpret online information.

7. Psychology Explores Both Real World and Theoretical Issues

As you begin your study of psychology, it might seem like some of the theories and research you learn about do not really apply to real-life problems. It is important to remember, however, that psychology is both and applied and theoretical subject. Some researchers focus on adding information to our overall body of knowledge about the human mind and behavior, while other concentrate directly on solving problems and applying psychological problems to real-world situations.

8. Psychology Offers a Wide Range of Career Options

If you are thinking about majoring in psychology, then you should be pleased to discover that there are many different career paths to choose from.

Different career options depend largely on your educational level and work experience, so it is important to research the required training and licensing requirements of your chosen specialty area. Just a few of the possible career options include clinical psychology, forensic psychology, health psychology and industrial-organizational psychology.

9. Psychology Studies Both Normal and Abnormal Behavior

When many people think about psychology, they immediately think about the diagnosis and treatment of abnormal behavior. However, it is important to remember that psychology studies normal behavior as well.

10. Psychology Seeks to Describe, Explain, Predict, Modify and Improve Behavior

There are four major goals of psychology:

- To describe human thought and behavior
- To explain why these behaviors occur
- To predict how, why and when these behaviors will occur again in the future
- To modify and improve behaviors to better the lives of individuals and society as a whole.

UNIT 2. HISTORY OF PSYCHOLOGY. Contemporary psychology is interested in an enormous range of topics, looking a human behavior and mental process from the neural level to the cultural level. Psychologists study human issues that begin before birth and continue until death. By understanding the history of psychology, you can gain a better understanding of how these topics are studied and what we have learned thus far.

TEXT 7. THE BEGINNINGS OF PSYCHOLOGY: PHILOSOPHY AND PHYSIOLOGY

While psychology did not emerge as a separate discipline until the late 1800s, its earliest history can be traced back to the time of the early Greeks. During the 17th-century, the French philosopher Rene Descartes introduced the idea of dualism, which asserted that the mind and body were two separate entities that interact to form the human experience. Many other issues still debated by psychologists today, such as the relative contributions of nature vs. nurture, are rooted in these early philosophical traditions.

So what makes psychology different from philosophy? While early philosophers relied on methods such as observation and logic, today's psychologists utilize scientific methodologies to study and draw conclusions about human thought and behavior. Physiology also contributed to psychology's eventual emergence as a scientific discipline. Early physiology research on the brain and behavior had a dramatic impact on psychology, ultimately contributing to the

application of scientific methodologies to the study of human thought and behavior.

Psychology Emerges as a Separate Discipline

During the mid-1800s, a German physiologist named Wilhelm Wundt was using scientific research methods to investigate reaction times. His book published in 1874, *Principles of Physiological Psychology*, outlined many of the major connections between the science of physiology and the study of human thought and behavior. He later opened the world's first psychology lab in 1879 at the University of Leipzig. This event is generally considered the official start of psychology as a separate and distinct scientific discipline.

How did Wundt view psychology? He perceived the subject as the study of human consciousness and thought to apply experimental methods to studying internal mental processes. While his use of a process known as *introspection* is seen as unreliable and unscientific today, his early work in psychology helped set the stage for future experimental methods. An estimated 17,000 students attended Wundt's psychology lectures, and hundreds more pursued degrees in psychology and studied in his psychology lab. While his influence dwindled in the years to come, his impact on psychology is unquestionable.

Structuralism Becomes Psychology's First School of Thought

Edward B. Titchener, one of Wundt's most famous students, would go on to found psychology's first major school of thought. According to the structuralists, human consciousness could be broken down into much smaller parts. Using a process known as introspection, trained subjects would attempt to break down their responses and reactions to the most basic sensation and perceptions.

While structuralism is notable for its emphasis on scientific research, its methods were unreliable, limiting, and subjective. When Titchener died in 1927, structuralism essentially died with him.

The Functionalism of William James

Psychology flourished in American during the mid- to late-1800s. William James emerged as one of the major American psychologists during this period and

the publication of his classic textbook, *The Principles of Psychology*, established him as the father of American psychology. His book soon became the standard text in psychology and his ideas eventually served as the basis for a new school of thought known as functionalism.

The focus of functionalism was on how behavior actually works to help people live in their environment. Functionalists utilized methods such as direct observation. While both of these early schools of thought emphasized human consciousness, their conceptions of it were significantly different. While the structuralists thought to break down mental processes into their smallest parts, the functionalists believed that consciousness existed as a more continuous and changing process. While functionalism is no longer a separate school of thought, it would go on to influence later psychologists and theories of human thought and behavior.

Psychoanalysis - The Psychology of Sigmund Freud

Up to this point, early psychology stressed conscious human experience. An Austrian physician named Sigmund Freud changed the face of psychology in a dramatic way, proposing a theory of personality that emphasized the importance of the unconscious mind. Freud's clinical work with patients suffering from hysteria and other ailments led him to believe that early childhood experiences and unconscious impulses contributed to the development of adult personality and behavior.

In his book *The Psychopathology of Everyday Life*, Freud detailed how these unconscious thoughts and impulses are expressed, often through slips of the tongue (known as "Freudian slips") and dreams. According to Freud, psychological disorders are the result of these unconscious conflicts becoming extreme or unbalanced. The psychoanalytic theory proposed by Sigmund Freud had a tremendous impact on 20th-century thought, influencing the mental health field as well as other areas including art, literature and popular culture. While many of his ideas are viewed with skepticism today, his influence on psychology is undeniable.

The Rise of Behaviorism

Psychology changed dramatically during the early 20th-century as another school of thought known as behaviorism rose to dominance. Behaviorism was a major change from previous theoretical perspectives, rejecting the emphasis on both the conscious and unconscious mind. Instead, behaviorism strove to make psychology a more scientific discipline by focusing purely on observable behavior.

Behaviorism had its earliest start with the work of a Russian physiologist named Ivan Pavlov. Pavlov's research on the digestive systems of dogs led to his discovery of the classical conditioning process, which demonstrated that behaviors could be learned via conditioned associations. Pavlov demonstrated that this learning process could be used to make an association between and environmental stimulus and a naturally occurring stimulus.

An American psychologist named John B. Watson soon became one of the strongest advocates of behaviorism. The impact of behaviorism was enormous, and this school of thought continued to dominate for the next 50 years. Psychologist B.F. Skinner furthered the behaviorist perspective with his concept of operant conditioning, which demonstrated the effect of punishment and reinforcement on behavior.

While behaviorism eventually lost its hold on psychology, the basic principles of behavioral psychology are still widely in use today. Therapeutic techniques such as behavior analysis, behavioral modification and token economies are often utilized to help children learn new skills and overcome maladaptive behaviors, while conditioning is used in many situations ranging from parenting to education.

Humanistic Psychology - The Third Force

While the first half of the twentieth-century was dominated by psychoanalysis and behaviorism, a new school of thought known as humanistic psychology emerged during the second half of the century. Often referred to as the "third force" in psychology, this theoretical perspective emphasized conscious experiences.

American psychologist Carl Rogers is often considered to be one of the founders of this school of thought. While psychoanalysts looked at unconscious impulses and behaviorists focused purely on environmental causes, Rogers believed strongly in the power of free will and self-determination. Psychologist Abraham Maslow also contributed to humanistic psychology with his famous hierarchy of needs theory of human motivation.

Contemporary Psychology

As you have seen in this brief overview of psychology's history, this discipline has seen dramatic growth and change since its official beginnings in Wundt's lab. The story certainly does not end here. Psychology has continued to evolve since 1960 and new ideas and perspectives have been introduced. Recent research in psychology looks at many aspects of the human experience, from the biological influences on behavior to the impact of social and cultural factors.

Today, the majority of psychologists do not identify themselves with a single school of thought. Instead, they often focus on a particular specialty area or perspective, often drawing on ideas from a range of theoretical backgrounds. This eclectic approach has contributed new ideas and theories that will continue to shape psychology for years to come.

TEXT 8. THE BEGINNING OF MODERN PSYCHOLOGY (American view)

1878 - G. Stanley Hall becomes the first American to earn a Ph.D. in psychology. Hall eventually founds the American Psychological Association.

1879 – Wilhelm Wundt founds the first experimental psychology lab in Leipzig, Germany. The event is considered the starting point of psychology as a separate science.

1881 --Wundt forms the professional journal *Philosophische Studien* (Philosophical Studies)

1883 - G. Stanley Hall opens the first experimental psychology lab in the United States at John Hopkins University.

1885 - Herman Ebbinghaus published his famous *Über das Gedächtnis* ("On Memory"), which was later translated to English as *Memory. A Contribution to Experimental Psychology*. In the work, he describes his learning and memory experiments that he conducted on himself.

1886 – Sigmund Freud begins providing therapy to patients in Vienna, Austria.

1888 - James McKeen Cattell becomes the first professor of psychology at the University of Pennsylvania.

1890 - James McKeen Cattell publishes *Mental Tests and Measurements*, marking the beginning of the practice of psychological assessment.

-William James publishes *Principles of Psychology*.

-Sir Francis Galton creates correlation technique to better understand relationships between variable in intelligence studies.

1892 --G. Stanley Hall forms the American Psychological Association (APA), which initially has just 42 members.

- Wundt's student Edward B. Titchener moves to America.

1894 - Margaret Floy Washburn completes her training under Tichener.

1895 - Alfred Binet forms the first psychology lab devoted to psychodiagnosis.

1898 - Edward Thorndike develops the Law of Effect.

Important Psychology Events In the Twentieth-Century

1900 – Sigmund Freud publishes *Interpretation of Dreams*.

1901 - The British Psychological Society is formed.

1905 - Mary Whiton Calkins is elected the first woman president of the American Psychological Association.

- Alfred Binet publishes the intelligence test *New Methods for the Diagnosis of the Intellectual Level of Subnormals.*

1906 - Ivan Pavlov publishes his findings on classical conditioning.

- Morton Prince founds the *Journal of Abnormal Psychology.*

1907 – Carl Jung publishes *The Psychology of Dementia Praecox.*

1909 - Calkins publishes *A First Book in Psychology*.

1912 - Edward Thorndike publishes *Animal Intelligence.* The article leads to the development of the theory of operant conditioning.

- Max Wertheimer publishes *Experimental Studies of the Perception of Movement*, leading to the development of Gestalt Psychology.

1913 – Carl Jung begins to depart from Freudian views and develops his own theories, which are eventually known as analytical psychology.

- John B. Watson publishes *Psychology as the Behaviorist Views It*. The work helped establish behaviorism, which viewed human behavior arising from conditioned responses.

1915 – Sigmund Freud publishes work on repression.

1917 - Then president of the APA, Robert Yerkes writes the Alpha and Beta Tests for the Army to test intelligence.

1919 - John B. Watson publishes *Psychology, From the Standpoint of a Behaviorist*.

1920 - Watson and Rosalie Rayner publish research the classical conditioning of fear with their subject, Little Albert.

1925 - Gestal Psychology is brought to America with the publication of Wolfgang Kohler's *Perception: An Introduction to the Gestalt Theory.*

1932 - Jean Piaget becomes the foremost cognitive theorist with the publication of his work *The Moral Judgment of Children.*

1935 - Henry Murray publishes the *Thematic Appreception Test (TAT).*

1942 - Carl Rogers developed client-centered therapy and publishes *Counseling and Psychotherapy*. His approach encourages respect and positive regard for patients.

1952 - The Diagnostic and Statistical Manual of Mental Disorders is published.

1954 - Abraham Maslow publishes *Motivation and Personality*, describing his theory of a hierarchy of needs. He also helps found humanistic psychology.

1958 - Harry Harlow publishes The Nature of Love, which describe his experiments with rhesus monkeys on the importance of attachment and love.

1961 - Albert Bandura conducts his now famous Bobo doll experiment.

1963 - Albert Bandura first describes the concept of observational learning to explain personality development.

1974 - Stanley Milgram publishes *Obedience to Authority*, which presented the findings of his famous obedience experiments.

1980 - The DSM-III is published.

1990 - Noam Chomsky publishes *On Nature, Use and Acquisition of Language*.

1991 - Steven Pinker publishes an article in *Science* introducing his theory of how children acquire language, which he later details further in his book *The Language Instinct*.

1994 - The DSM-IV is published.

Psychology Events In the Twenty-First Century

2000 - Genetic researchers finish mapping human genes. Scientists hope to one day isolate the individual genes responsible for different diseases.

2002 - Steven Pinker publishes *The Blank Slate*, arguing against the concept of *tabula rasa*.

TEXT 9. THE ROLE OF PERSPECTIVE IN PSYCHOLOGY

A paradigm is a broad system of theoretical assumptions employed by a scientific community to try to make sense of a domain of experience. Psychology lacks a unified paradigm but has a number of schools of thoughts or perspectives, broad way of understanding psychological phenomena. A psychological perspective, like a paradigm, includes a theoretical propositions, shared metaphors and accepted methods of observation. There are four main perspectives in a

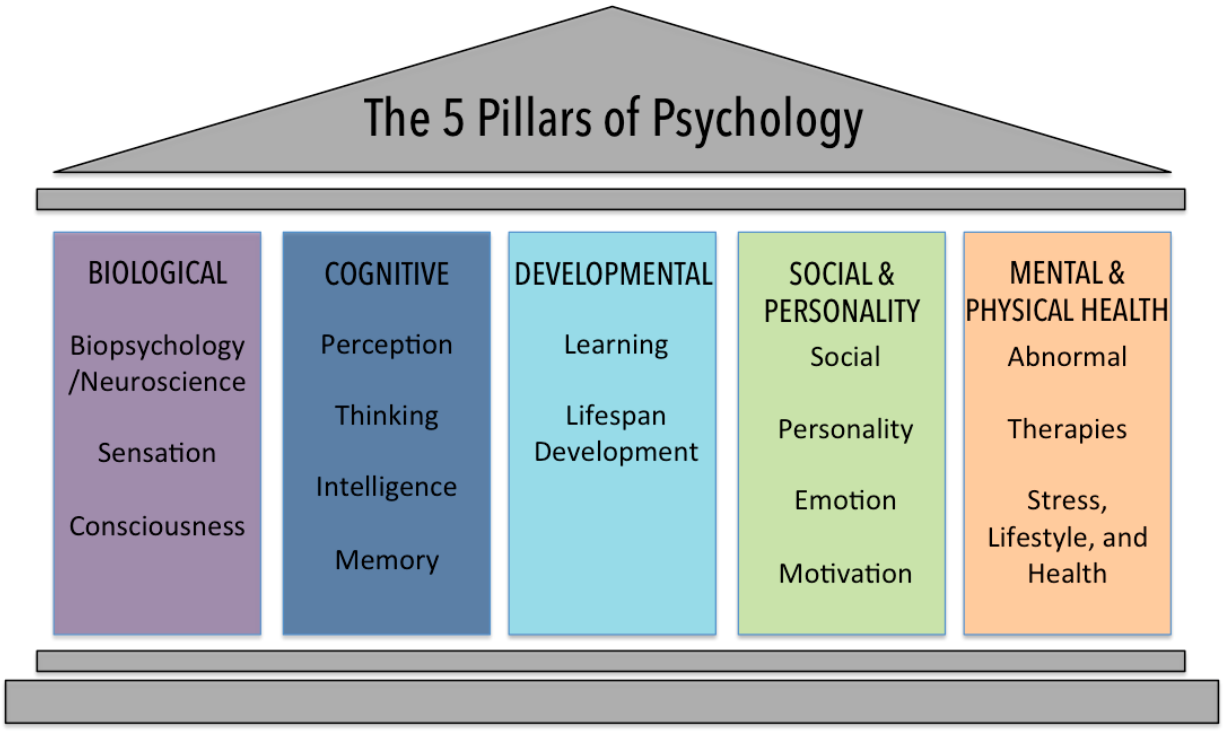
contemporary psychology: the psychodynamic, the behaviorists, the cognitive, the evolutionary.

The psychodynamic perspective's primary aim is to interpret meanings, many of which may be unconscious. The basic principle of the perspective: behaviour is largely the result of unconscious processes, motivation and early experience. The primary methods are interpretation of verbal discourse, slip of the tongue, dreams, fantasies, actions; limited experimentation. The primary metaphors are the mind as the battleground for warring factions and an iceberg with consciousness the tip.

The behaviorist perspective focuses on the relation between environmental events and the responses of the organism. The basic principle: behavior is learned and selected by its environmental consequences. The metaphor is the machine, with the mind as a black box. The primary methods are experimentation with the humans and other animals.

The cognitive perspective focuses on the way people process, store and retrieve information. Basic principles: behavior is the product of information processing; storage, transformation and retrieval of data. The metaphor underling the cognitive perspective is the mind as computer. The primary methods is experimentation with humans; computer modeling.

The evolutionary perspective proposes the mechanism of natural selection, through which natural forces select traits of organisms that helped them to adjust to their environment. The basic notion is that evolution selects creatures that maximize their reproductive success, defined as a capacity to survive and reproduce, i.e. the basic metaphor of the perspective – life is like a race for survival and reproduction. The basic methods are deduction of explanations for traits and behaviour; cross-species and cross-cultural comparisons; limited experimentation.



TEXT 10. BRANCHES OF PSYCHOLOGY

There are a number of unique and distinctive branches of psychology. Each branch looks at questions and problems from a different perspective. While each branch has its own focus on psychological problems or concerns, all areas share a common goal of studying and explaining human thought and behavior. The following are some of the major branches of psychology within the field today.

Psychology is remarkably diverse with a tremendous range of specialty areas. Psychologists frequently choose to specialize in a subfield that is focused on a specific subject within psychology. Many of these specialty areas in psychology require graduate study in a particular area of interest.

Clinical psychology makes up the single largest specialty area in psychology. Clinicians are psychologists who assess, diagnose and treat mental illnesses. They frequently work in mental health centers, private or group practices or hospitals. Within the area of clinical psychology, there are also a number of sub-specialty areas. Some professionals are generalists and work with a wide range of clients, while others specialize in treating certain types of psychological disorders or a certain age group. For example, some clinical psychologists might work in a

hospital setting with individuals suffering from brain injuries or neurological conditions. Other clinical psychologists might work in a mental health center to counsel individuals or families coping with stress, mental illness, substance abuse or personal problems.

Clinical psychologists usually perform a wide range of tasks on a daily basis such as interviewing patients, conducting assessments, giving diagnostic tests, performing psychotherapy and administering programs. Work settings can vary based on the specific population that a clinician is working with. Common work settings include hospitals, schools, universities, prisons, mental health clinics and private practices.

There are also a number of different sub-specialty areas within clinical psychology, including:

Health psychologists promote good health through health maintenance counseling programs designed to help people achieve goals, such as stopping smoking or losing weight.

Neuropsychologists study the relation between the brain and behavior. They often work in stroke and head injury programs.

Geropsychologists deal with the special problems faced by the elderly. The emergence and growth of these specialties reflects the increasing participation of psychologists in providing direct services to special patient populations.

Counseling psychologists make up another large specialty area in psychology. These professionals perform many of the same tasks that clinical psychologists do, but counseling psychologists tend to work with clients suffering from less severe forms of mental illness. Counseling psychology focuses on providing therapeutic treatments to clients who experience a wide variety of symptoms. The Society of Counseling Psychology describes the field as "a psychological specialty [that] facilitates personal and interpersonal functioning across the life span with a focus on emotional, social, vocational, educational, health-related, developmental and organizational concerns."

Abnormal psychology is the area that looks at psychopathology and abnormal behavior. The term covers a broad range of disorders, from depression to obsession-compulsion to sexual deviation and many more. Counselors, clinical psychologists and psychotherapists often work directly in this field.

Behavioral psychology, also known as behaviorism, is a theory of learning based upon the idea that all behaviors are acquired through conditioning. While this branch of psychology dominated the field during the first part of the twentieth century, it became less prominent during the 1950s. However, behavioral techniques remain a mainstay in therapy, education and many other areas.

Biopsychology. The branch of psychology focused on the study of how the brain influences behavior is often known as biopsychology, although it has also been called physiological psychology, behavioral neuroscience and psychobiology.

Cognitive psychology is the branch of psychology that focuses on internal states, such as motivation, problem solving, decision-making, thinking and attention. This area of psychology has continued to grow since it emerged in the 1960s.

Comparative psychology is the branch of psychology concerned with the study of animal behavior. The study of animal behavior can lead to a deeper and broader understanding of human psychology.

Cross-cultural psychology is a branch of psychology that looks at how cultural factors influence human behavior. The International Association of Cross-Cultural Psychology was established in 1972, and this branch of psychology has continued to grow and develop since that time. Today, increasing numbers of psychologists investigate how behavior differs among various cultures throughout the world.

Developmental Psychology. This branch of psychology looks at development throughout the lifespan, from childhood to adulthood. The scientific study of human development seeks to understand and explain how and why people change throughout life. This includes all aspects of human growth, including physical, emotional, intellectual, social, perceptual and personality development.

Topics studied in this field include everything from prenatal development to Alzheimer's disease.

Educational psychology is the branch of psychology concerned with schools, teaching psychology, educational issues and student concerns. Educational psychologists often study how students learn or work directly with students, parents, teachers and administrators to improve student outcomes.

School psychology is a part of a specialty area that involves working within the educational system to help children with emotional, social and academic issues. The goal of school psychology is to collaborate with parents, teachers, and students to promote a healthy learning environment that focuses on the needs of children. School psychologists work with individual students and groups of students to deal with behavioral problems, academic difficulties, disabilities and other issues. They also work with teachers and parents to develop techniques to deal with home and classroom behavior. Other tasks include training students, parents and teachers about how to manage crisis situations and substance abuse problems.

Experimental psychology is the branch of psychology that utilizes scientific methods to research the brain and behavior. Many of these techniques are also used by other areas in psychology to conduct research on everything from childhood development to social issues.

Forensic psychology is a specialty area that deals with issues related to psychology and the law. Forensic psychologists perform a wide variety of duties, including providing testimony in court cases, assessing children in suspected child abuse cases, preparing children to give testimony and evaluating the mental competence of criminal suspects. Forensic psychologists work in the specialty area that deals with the intersection of psychology and the law. Forensic psychologists are often involved in custody disputes, insurance claims and lawsuits. Some professionals work in family courts and offer psychotherapy services, perform child custody evaluations, investigate reports of child abuse and conduct visitation risk assessments.

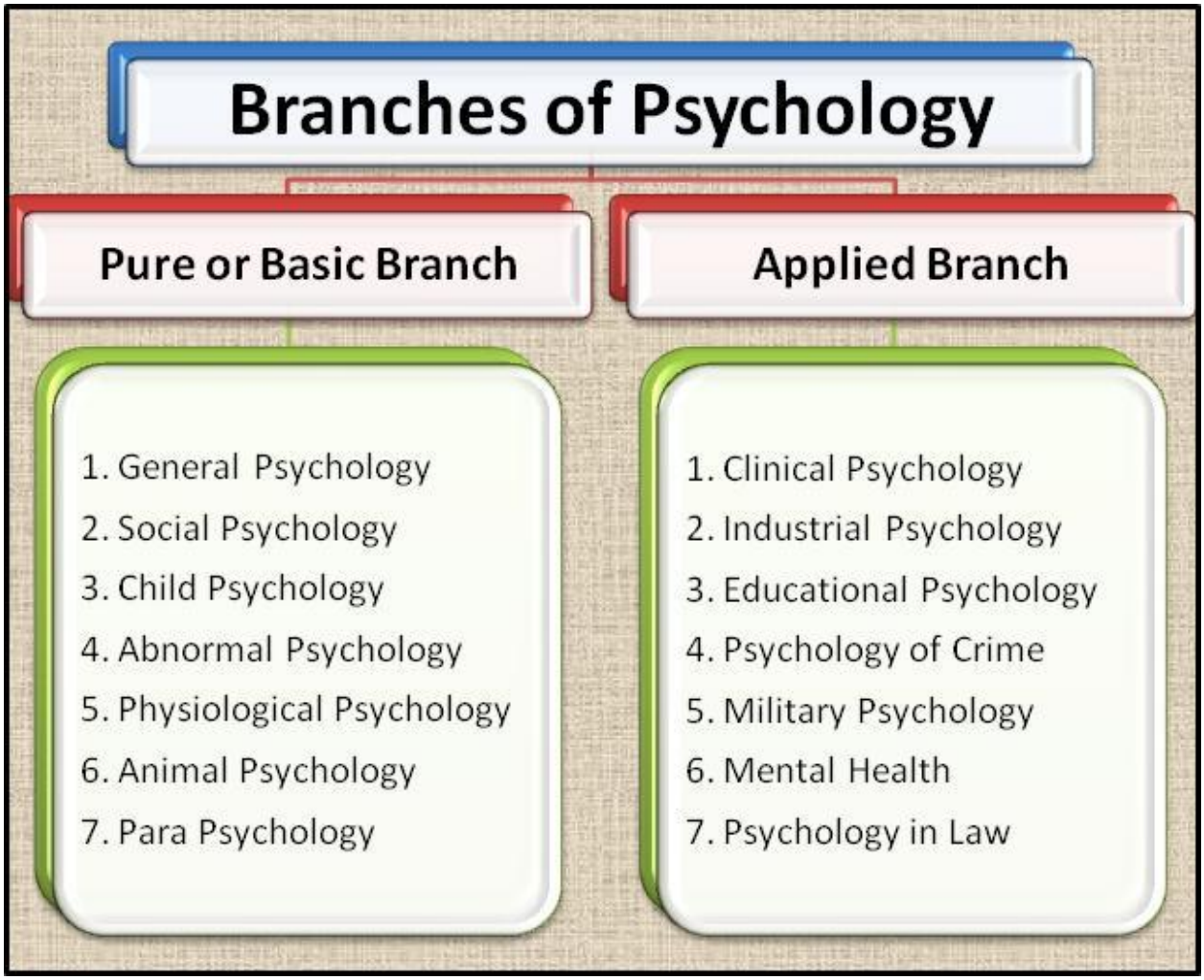
Those working in the civil courts often assess competency, provide second opinions and provide psychotherapy to crime victims. Professionals working in the criminal courts conduct evaluations of mental competency, work with child witnesses and provide assessment of juvenile and adult offenders.

Human factors is a specialty area of psychology that focuses on a range of different topics, including ergonomics, workplace safety, human error, product design, human capability and human-computer interaction. In fact, the terms human factors and ergonomics are often used synonymously, with human factors being commonly used in the United States and ergonomics in Europe. Human factors works to apply principles of psychology to designing products and creating work environments that boost productivity while minimizing safety issues. The field of human factors formally began during World War II, when a range of experts worked together to improve the safety of airplanes. Since that time, human factors psychology has continued to grow and today plays an important role in many other fields, including computing, manufacturing, product design, engineering, military and government industries.

Health psychology is a specialty area that focuses on how biology, psychology, behavior and social factors influence health and illness. Other terms including medical psychology and behavioral medicine are sometimes used interchangeably with the term health psychology. The field of health psychology is focused on promoting health as well as the prevention and treatment of disease and illness.

Personality Psychology. This branch of psychology is focused on the patterns of thoughts, feelings, and behavior that make a person unique. Some of the best-known theories in psychology have arisen from this field, including Freud's psychoanalytic theory of personality and Erikson's theory of psychosocial development.

Social psychology seeks to explain and understand social behavior and looks at diverse topics including group behavior, social interactions, leadership, nonverbal communication and social influences on decision-making.



UNIT 3. RESEARCH METHODS

TEXT 11. METHODS OF PSYCHOLOGY

Psychology is a science, which means that it uses scientific methods to gather information and test ideas. In addition to thinking about behavior, psychologists acquire new information through carefully controlled methods of observation. Although they are many and varied, scientific methods are all based on the assumption that behavior is lawful and orderly and capable of being understood in scientific terms. Each scientific method has different advantages and disadvantages and is best suited to answering different types of questions.

The simplest scientific methods are descriptive methods. Information that allows us to describe a psychological phenomenon can be gathered by asking questions about it in surveys, by observing it in natural settings, or through extensive experience with it in clinical cases.

When the scientific question concerns the relationship between two variables, correlational methods are often used. Both variables are measured quantitatively and the relationship between the two is noted; however, it's not possible to determine from such information whether one variable causes the other to change. To determine whether cause-and-effect relationships exist, formal experiments must be conducted.

In formal experiments, scientists rigorously control the conditions of the experiment so that only one explanation for the results is likely. In the simplest experiments, one factor—the independent variable—is artificially manipulated by the experimenter to see what effect it has on another variable—the dependent variable. Often one group of subjects—the control group— receives none of the independent variable, whereas the independent variable is present in another group—the experimental group. In a study of the effects of alcohol on the memory of a list of words, for example, the alcohol is the independent variable. Alcohol is given to subjects in the experimental group and not given to the subjects in the control group, so its effects on the dependent variable, memory of the list, can be determined.

While it's important to conduct psychological research using human subjects, it's essential that we protect the rights of subjects. Subjects must not be coerced in any way into participating and must be informed about the nature of the study before they are asked for their consent to participate. Subjects may be deceived about a study only if (1) the information withheld is not relevant to their decision to participate, and (2) they are informed about the true nature of the study immediately after it's over. Furthermore, the experimenter has an obligation to keep all information learned about the subject in an experiment confidential. Research with animal subjects is similarly considered to be ethical only when {1)

the research is necessary, (2) the health of the animals is protected, and (3) pain and suffering are minimized.

TEXT 12. PSYCHOLOGY RESEARCH METHODS

As psychology moved away from its philosophical roots, psychologists began to employ more and more scientific methods to study human behavior. Today, researchers employ a variety of scientific methods, including experiments, correlational studies, longitudinal studies and others to test, explain and predict behavior.

A simple experiment is used to establish cause and effect, so this type of study is often used to determine the effect of a treatment. In a simple experiment, study participants are randomly assigned to one of two groups. Generally, one group is the control group and receives no treatment, while the other group is the experimental group and receives the treatment.

The simple experiment is composed of a few key elements:

✓ **The experimental hypothesis:** A statement that predicts that the treatment will cause an effect. The experimental hypothesis will always be phrased as a cause-and-effect statement.

✓ **The null hypothesis:** A hypothesis that the experimental treatment will have no effect on the participants or dependent variables. It is important to note that failing to find an effect of the treatment does not mean that there is no effect. The treatment might impact another variable that the researchers are not measuring in the current experiment.

✓ **The independent variable:** The treatment variable that is manipulated by the experimenter.

✓ **The dependent variable:** The response that the experimenter is measuring.

✓ **The control group:** made up of individuals who are randomly assigned to a group but do not receive the treatment. The measures takes from the control group

are then compared to those in the experimental group to determine if the treatment had an effect.

✓ **The experimental group:** made up of individuals who are randomly assigned to the group and then receive the treatment. The scores of these participants are compared to those in the control group to determine if the treatment had an effect.

Correlational studies are used to look for relationships between variables. There are three possible results of a correlational study: a positive correlation, a negative correlation, and no correlation. The correlation coefficient is a measure of correlation strength and can range from –1.00 to +1.00.

- **Positive Correlations:** Both variables increase or decrease at the same time.
- **Negative Correlations:** While the amount of one variable increases, the other decreases (and vice versa).
- **No Correlation:** Indicates no relationship between the two variables. .

Naturalistic observation involves observing and recording the variables of interest in the natural environment without interference or manipulation by the experimenter.

Advantages of Naturalistic Observation:

✓ Gives the experimenter the opportunity to view the variable of interest in a natural setting.

✓ Can offer ideas for further research.

✓ May be the only option if lab experimentation is not possible.

Disadvantages of Naturalistic Observation:

✓ Can be time consuming and expensive.

✓ Does not allow for scientific control of variables.

✓ Experimenters cannot control extraneous variables.

✓ Subjects may be aware of the observer and may act differently as a result.

Survey and questionnaires are one of the most common methods used in psychological research. In this method, a random sample of participants completes a survey, test, or questionnaire that relates to the variables of interest. Random

sampling is a vital part of ensuring the generalizability of the survey results. Advantages of the Survey Method:

- ✓ It's fast, cheap, and easy. Researchers can collect large amount of data in a relatively short amount of time.
- ✓ More flexible than some other methods.

Disadvantages of the Survey Method:

- ✓ Can be affected by an unrepresentative sample or poor survey questions.
- ✓ Participants can affect the outcome. Some participants try to please the researcher, lie to make themselves look better, or have mistaken memories.

Archival research is performed by analyzing studies conducted by other researchers or by looking at historical patient records.

Advantages of Archival Research:

- ✓ The experimenter cannot introduce changes in participant behavior.
- ✓ Enormous amounts of data provide a better view of trends, relationships, and outcomes.
- ✓ Often less expensive than other study methods. Researchers can often access data through free archives or records databases.

Disadvantages of Archival Research:

- ✓ The researchers have no control over how data was collected.
- ✓ Important date may be missing from the records.
- ✓ Previous research may be unreliable

Longitudinal research is a type of research method used to discover relationships between variables that are not related to various background variables. This observational research technique involves studying the same group of individuals over an extended period of time. Data is first collected at the outset of the study, and may then be gathered repeatedly throughout the length of the study. In some cases, longitudinal studies can last several decades.

Benefits of Longitudinal Research

The benefit of this type of research is that it allows researchers to look at changes over time. Because of this, longitudinal methods are particularly useful when studying development and lifespan issues.

Drawbacks of Longitudinal Research

However, longitudinal studies require enormous amounts of time and are often quite expensive. Because of this, these studies often have only a small group of subjects, which makes it difficult to apply the results to a larger population. Another problem is that participants sometimes drop out of the study, shrinking the sample size and decreasing the amount of data collected.

Types of Longitudinal Research

There are three major types of longitudinal studies:

✓ **Panel Study:** Involves sampling a cross-section of individuals.

✓ **Cohort Study:** Involves selecting a group based on a specific event such as birth, geographic location or historical experience.

✓ **Retrospective Study:** Involves looking to the past by looking at historical information such as medical records.

What Is a Variable?

A variable is something that can be changed, such as a characteristic or value. Variables are generally used in psychology experiments to determine if changes to one thing result in changes to another.

In a psychology experiment:

- The **independent variable** is the variable that is controlled and manipulated by the experimenter. For example, in an experiment on the impact of sleep deprivation on test performance, sleep deprivation would be the independent variable.
- The **dependent variable** is the variable that is measured by the experimenter. In our previous example, the scores on the test performance measure would be the dependent variable.

TEXT 13. SCIENTIFIC RESEARCH METHODS

Research using the scientific method is a process that moves an idea from hypothesis to theory. This process can take years - even decades. Studies are only considered scientifically valid if this method is followed. They are taught at all levels of education, from elementary school (I still have my daughter's 5th grade poster presentation regarding which brand of dish soap produced more suds) to serving as the backbone of every Ph.D. candidate's dissertation. The process is as follows:

- A researcher garners an idea through review of the research literature to date, observations through clinical practice or even conjecture that seems to hold truth - for example, Pavlov noting the behavior of his dogs at meal time or Newton being bonked on the head by a falling apple.
- From this initial idea, a scientist develops a hypothesis - a tentative explanation – into what he or she believes to be the truth.
- The next step involves the development of a method for testing this hypothesis.
- The research is then conducted using the detailed method chosen and the data is then analyzed.
- The findings are reported to the scientific community and future directions are determined. If the findings support the hypothesis, additional research will be conducted by other scientific teams towards replicating the same results, giving additional weight to the hypothesis, or demonstrating that the same results cannot be reproduced, indicating the hypothesis is not valid. This process may also uncover information that gives researchers new ideas, new hypotheses for research.
- If, over time, many researchers following the exact same procedures and then testing with differing methods in differing circumstances have achieved the same results, a hypothesis becomes a theory -– a formally accepted explanation with considerable facts to support why or how something happens.

Over the couple of centuries the scientific method has been developed and applied, the process began as a ponderous, disorganized approach with gains in understanding and theory slow to evolve.

However, as with any discipline, the work gained a collective consciousness, shed much of the weight of religious and political interference, developed specialties and organized review processes. This allowed research to become leaner and more efficient, gaining momentum with findings built on the work of predecessors. Gains in learning are now achieved in periods of years rather than decades.

Consider the computer industry. Within my lifetime, the work now achieved by a calculator found in every high school student's backpack previously took a room full of processing machines the size of refrigerators to crunch the same calculations. These leaps in understanding and technology and are now the reality of medical research as well.

UNIT 4. GENERAL PSYCHOLOGY

TEXT 14. ORGANIZATION OF THE NERVOUS SYSTEM

All parts of the nervous system are interrelated. However, for purposes of anatomical discussion, the nervous system can be separated into the following divisions and subdivisions:

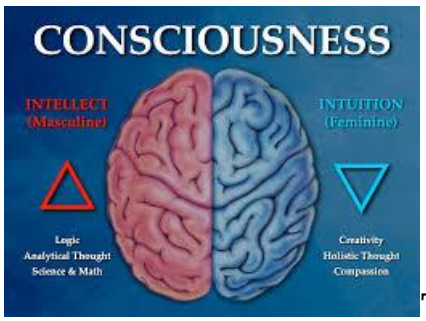
The central nervous system includes all the nerves in the brain and spinal cord, and it contains the majority of the body's neurons. Some of the very simplest stimulus-response reflexes are carried out within the spinal cord. The peripheral nervous system consists of the nerves leading from the brain and spinal cord to the

other parts of the body. The peripheral nervous system is further subdivided into the somatic system and the autonomic system.

The nerves of the somatic system transmit information about external stimulation from the skin, muscles, and joints to the central nervous system; they make us aware of pain, pressure, and temperature variations. Nerves of the somatic system also carry impulses from the central nervous system back to the body parts, where they initiate action. The nerves of the autonomic system run to and from the internal organs regulating such processes as respiration, heart rate, and digestion. It derives its name from the fact that many of the activities it controls are autonomous, or self-regulating — such as digestion and circulation, which continue even when a person is asleep or unconscious.

The autonomic nervous system has two divisions - the sympathetic and the parasympathetic — which are often antagonistic in their actions. The sympathetic division tends to act as a unit. During emotional excitement it simultaneously speeds up the heart, dilates the arteries of the skeletal muscles and heart, and constricts the arteries of the skin and digestive organs; its action also leads to perspiration and to secretion of certain hormones that increase emotional arousal. Unlike the sympathetic system, the parasympathetic division tends to affect one organ at a time. If the sympathetic system is thought of as dominant during violent and excited activity, the parasympathetic system may be thought of as dominant during quiescence. It participates in digestion and, in general, it maintains the functions that conserve and protect bodily resources.

When both sympathetic and parasympathetic fibers are connected to the same muscle or gland, they usually act in opposite manners. Thus, one speeds the heart rate, the other slows it; one inhibits digestive processes, the other facilitates them, one dilates the pupils of the eyes, the other constricts them. Both systems are usually exerting some influence (that is, both are usually «on»), but one temporarily dominates the other. Their interaction is very complex though, and not fully understood.



TEXT 15. MAJOR AND MINOR HEMISPHERES

It has long been known that the human brain consist of two so-called hemispheres that appear to be identical. These two halves, which we will call LH (Left Hemisphere) and RH (Right Hemisphere) have, however, quite distinct functions. In right-handed people the LH controls the right half of the body, and the RH - the left half . Most importantly, the two halves of the brain appear to have two quite distinct modalities of thought.

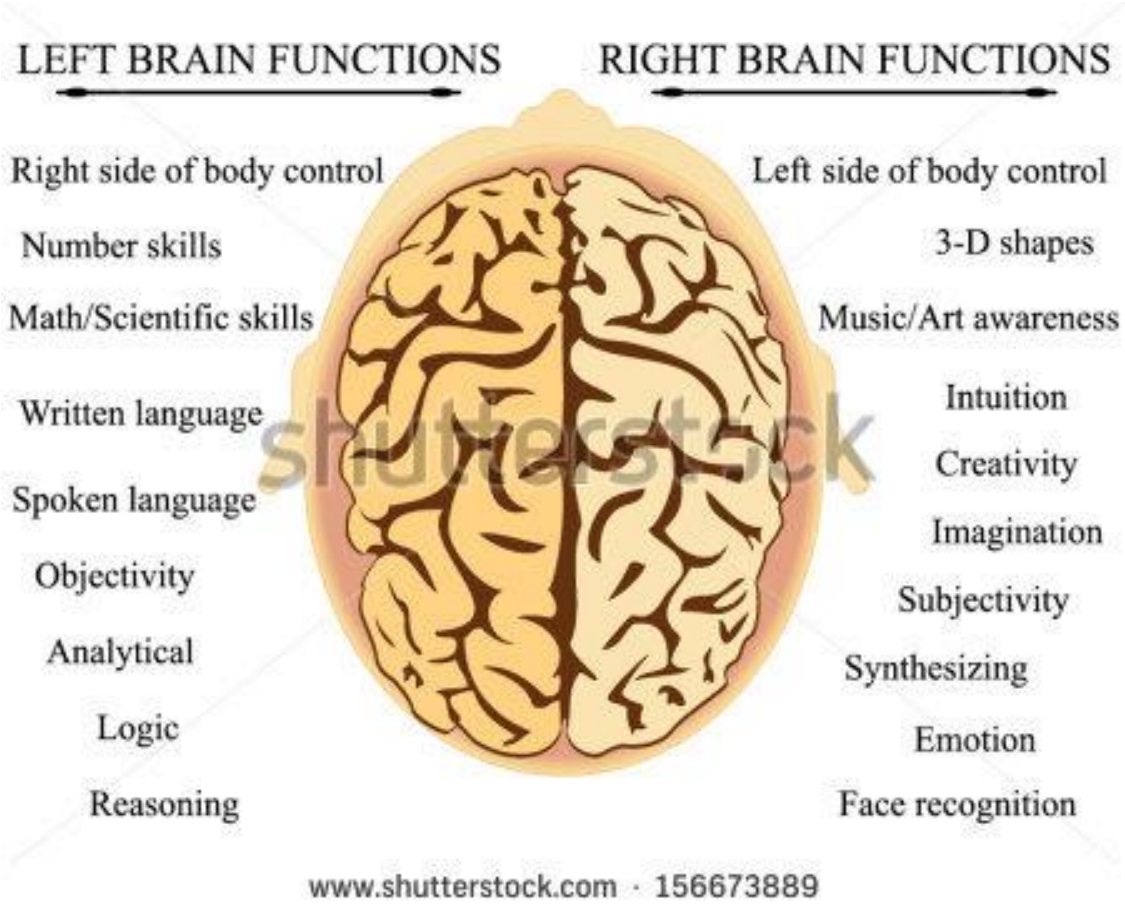
Studies with so-called split-brain subjects have made clear the striking differences between the functions of two hemispheres. The major, LH governs our ability to express ourselves in language. It can perform many complicated sequential and analytic activities and is skilled in mathematical computations. The minor, RH can comprehend very simple language. It can respond to simple nouns by selecting object such as a nut or comb, and it can even respond to associations of these objects. But it cannot comprehend more abstract linguistic forms. If the RH is presented with such simple commands as ”wink”, “nod”, “shake head”, or “smile”, it seldom responds. The RH can add simple two-digit numbers, but can do little beyond this in the way of calculation.

Although the RH may deserve the term “minor”, it is not without special abilities of its own. It appears to have a highly developed spatial and pattern sense. It is superior to the LH in constructing geometric and perspective drawings. It can assemble coloured blocks to match a complex design much more effectively than the left. During a verbal task activity increases in the LH, whereas during a spatial task activity increases in the right.

Some researchers believe that the minor hemisphere plays a special role in musical and artistic abilities, emotions, and dreaming. They would separate the analytical scientist or mathematician from the creative artist on the basis of the

relative dominance of their cerebral hemispheres. There is also considerable evidence that the RH is essentially the seat of intuition and that it thinks quite independently of the LH. Some hypothesize that the two hemispheres think in modes different from one another. The LH thinks, so to speak, in an orderly, sequential, and, we might call it, logical fashion. The RH, on the other hand, appears to think in terms of holistic images and metaphors. More evidence is needed, however, to substantiate such claims.

The specialization of the two hemispheres appears to develop along with language development. If the left hemisphere of a young child is damaged, the right one can take over the language functions without too much difficulty. Left-hemisphere damage in an adult, however, almost invariably produces language disability. The fact that right-handedness is the norm for human beings is probably related to the fact that the left hemisphere controls speech.



TEXT 16. SENSATION

Imagine a world without sensation. You would exist in a world, where there was neither light nor shadow, and where no sound disturbed the silence. Food would have no flavor, and you would know neither the fragrance of flowers nor the smell of decay. A lover's cares could not excite you, nor could a cooling breeze relieve the summer heat — which you could not feel, no matter how badly sunburned you became. If you picked up a knife, you couldn't sense it in your hand; if you cut yourself, you would feel no pain. Even walking would be virtually impossible, because you could not tell where your feet were relative to the ground and each other.

Could you live very long without sensation? Your chances would be slim, because without your senses you would have no lifeline to reality. Your senses are specialized neural structures that put you in touch with the external world, enabling you to deal with the challenges of the environment. Whenever there is a large enough change in the environmental energies that impinge on you, your senses capture this change and transform it into information you can use to reach your goals. The change in energy is a stimulus: thanks to your senses, you can respond to it in some advantageous way.

Although most people believe that human beings have five senses, we actually have at least a dozen. We are all familiar with the five senses whose receptors are located in the eyes, ears, nose, tongue, and skin. But few people realize that within the skin are receptors for at least four kinds sensation (touch, warmth, cold, and pain). This brings our sensory count to eight, but we are not finished. Deep within the ear is an organ that provides our sense of balance, and receptors in the muscles, joints, and tendons tell us about the movement and position of our body. Additional receptors within the brain monitor are blood chemistry and temperature.

Each sense organ contains special receptors that are sensitive to particular types of stimuli. No matter what sort of sensation they deal with, all sense organs operate according to similar principles. The basic job of

all sensory receptors is the same: to convert environmental stimuli into neural impulses, the language of the nervous system.

Vision is one of our richest senses; it provides us with the wealth of information. The eyes receive light reflected from objects in the world, and from this light we perceive shape, colour, depth, texture, and movement.

Hearing. Auditory receptors in the ears respond to sound waves to produce neural signals. Sound waves are caused by pressure changes in the atmosphere, which generate vibrations among the air molecules. The vibrations send waves of compressed and expanded air molecules through the air, striking the eardrum. Then the eardrum is rapidly pushed and pulled by the compressions and expansions so that it vibrates in a pattern that corresponds to the sound.

The skin senses. Our skin is a shield that contains us and protects us from the world. A six-foot man of average weight and body build has about twenty-one square feet of skin surface. This pliable shield keeps out bacteria, holds in body fluids, wards off harmful sun rays, and regulates the temperature of the body core. At various depths within the skin are a number of receptors that connect with neurons to inform the brain about environmental stimulation. These receptors transmit information about four different kinds of skin sensations: touch, warmth, cold, and pain. But not all such receptors are in the skin; touch and pain kinds of receptors are also found in the muscles and the internal organs.

The chemical senses: taste and smell. The chemical senses of taste and smell are so closely associated that we often confuse their messages. This confusion develops because receptors for these are located close together in the mouth, throat, and nasal cavity, causing smell and taste to interact. Without a sense of smell, the subtleties of food flavour cannot be appreciated. Many people consider olfaction, or the sense of smell, to be one of the "lower" senses. Among human being, smell serves a vital function: it warns us of possibly dangerous substances, such as gas leaks, smoke, or spoiled food. Odours are also involved with human pleasure. Our use of perfumes, deodorants,

and fragrant flowers shows the premium we place on pleasant aromas.

Taste is a more restricted sense than olfaction. An odour can be detected and identified from a distance, but the source of a taste must be in contact with the tongue.

In order to move about the world, we must maintain our balance, posture, and orientation in space. Our ability to orient ourselves is produced by the coordination of the vestibular and ***kinesthetic senses***. The vestibular sense contributes to balance. The vestibular sense organ lies in the inner ear.

TEXT 17. PERCEPTION

What we sense we interpret, and this psychological process is called "perception". By perception we mean the process by which we become aware of and interpret or identify the sensations we receive. There are a lot of factors that influence our perceptions. Inheritance seems to be one factor. Depth perception, for example, is a response that is found in very young children, and also in new-born animals. Learning is another influence. Perception depends on what you are used to, what you expect, and the context of your experience.

Our learning experiences also help us to understand the differences in the sensations we receive. Inheritance and experience are not the only factors which affect our understanding of the stimuli from our senses. All the different cues about the stimulus will determine the way we interpret it. The surrounding cues and features of the environment, derivable from all our different senses, collectively, contribute to the total process of perception. They may aid or distort our knowledge of the world.

The relation between the stimulus-in-the-context and the viewer causes the perception to be incorrect. This sort of phenomenon is sometimes called a visual illusion. The movement of the pictures of the cinema, where the still pictures are successively exposed to the eye to give the effect of movement, is also, in an obvious sense, illusory.

Perception is influenced by the condition or state of the person at the time. We tend to perceive things as we need or want to be rather than as they are. Standing on the street corner and waiting for someone we know, we find that we may make a number of errors of recognition. We think a person is our friend, and he is a complete stranger. The tendency to interpret things or people in a way that satisfies our motives or needs is typical of the manner in which our mental processes operate in perception. The reverse can also happen. We may not notice someone we are very familiar with, simply because we are not expecting to meet them.

The process of perception is complex and applies to the whole range of sensations. The field of visual perception happens to be the one which has been most frequently investigated and therefore most usefully discussed.

TEXT 18. **INTELLIGENCE**

Intelligence encompasses a number of mental abilities such as reasoning, planning and problem-solving. The topic of intelligence is one of the biggest and most debated in psychology. While intelligence is one of the most talked about subjects within psychology, there is no standard definition of what exactly constitutes 'intelligence.' Some researchers have suggested that intelligence is a single, general ability, while other believe that intelligence encompasses a range of aptitudes, skills and talents.

Intelligence is a property of mind that encompasses many related mental abilities, such as the capacities to reason, plan, solve problems, think abstractly, comprehend ideas and language, and learn. Although intelligence is sometimes viewed quite broadly, psychologists typically regard the trait as distinct from creativity, personality, character, or wisdom.

At least two major "consensus" definitions of intelligence have been proposed. First, from Intelligence: Knowns and Unknowns, a report of a task force convened by the American Psychological Association in 1995: Individuals differ

from one another in their ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought. Although these individual differences can be substantial, they are never entirely consistent: a given person's intellectual performance will vary on different occasions, in different domains, as judged by different criteria. Concepts of "intelligence" are attempts to clarify and organize this complex set of phenomena. Although considerable clarity has been achieved in some areas, no such conceptualization has yet answered all the important questions and none commands universal assent. Indeed, when two dozen prominent theorists were recently asked to define intelligence, they gave two dozen somewhat different definitions.

TEXT 19. **WHAT IS ATTENTION?**

Attention is a concept studied in cognitive psychology that refers to how we actively process specific information present in our environment. As you are reading this, there are numerous sights, sounds and sensations going on around you – the pressure of your feet against the floor, the sight of the street out of a nearby window, the soft warmth of your shirt, the memory of a conversation you had earlier with a friend. How do we manage to experience all of these sensations and still focus on just one element of our environment?

According to psychologist and philosopher William James, attention "is the taking possession of the mind, in clear and vivid form, of one out of what may seem several simultaneously possible objects or trains of thoughts…It implies withdrawal from some things in order to deal effectively with others."

Think of attention as a highlighter. As you read through a section of text in a book, the highlighted section stands out, causing you to focus your interest on that area. Attention allows you to "tune out" information, sensations and perceptions that are not relevant at the moment and instead focus your energy on the information that is important.

TEXT 20. **MEMORY**

In psychology, memory is an organism's ability to store, retain and subsequently recall information. Although traditional studies of memory began in the realms of philosophy, the late nineteenth and early twentieth century put memory within the paradigms of cognitive psychology. In the recent decades, it has become one of the principal pillars of a new branch of science called cognitive neuroscience, a marriage between cognitive psychology and neuroscience.

There are several ways to classify memories, based on duration, nature and retrieval of information. From the information processing perspective there are three main stages in the formation and retrieval of memory: *Encoding or Registration* (processing and combining of received information); *Storage* (creation of a permanent record of the encoded information); *Retrieval/Recall* (calling back the stored information in response to some cue for use in a process or activity).

A basic and generally accepted classification of memory is based on the duration of memory retention, and identifies three distinct types of memory: sensory memory, short term memory and long term memory.

TEXT 21. **WHAT IS MEMORY?**

Memory refers to the processes that are used to acquire, store, retain and later retrieve information. There are three major processes involved in memory: encoding, storage, and retrieval. In order to form new memories, information must be changed into a usable form, which occurs through the process known as encoding. Once information has been successfully encoded, it must be stored in memory for later use. Much of this stored memory lies outside of our awareness most of the time, except when we actually need to use it. The retrieval process allows us to bring stored memories into conscious awareness.

The Stage Model of Memory. While several different models of memory have been proposed, the stage model of memory is often used to explain the basic

structure and function of memory. Initially proposed in 1968 by Atkinson and Shiffrin, this theory outlines three separate stages of memory: sensory memory, short-term memory, and long-term memory.

Sensory Memory. Sensory memory is the earliest stage of memory. During this stage, sensory information from the environment is stored for a very brief period of time, generally for no longer than a half-second for visual information and 3 or 4 seconds for auditory information. We attend to only certain aspects of this sensory memory, allowing some of this information to pass into the next stage - short-term memory.

Short-Term Memory. Short-term memory, also known as active memory, is the information we are currently aware of or thinking about. In Freudian psychology, this memory would be referred to as the conscious mind. Paying attention to sensory memories generates the information in short-term memory. Most of the information stored in active memory will be kept for approximately 20 to 30 seconds. While many of our short-term memories are quickly forgotten, attending to this information allows it to continue on the next stage - long-term memory.

Long-Term Memory. Long-term memory refers to the continuing storage of information. In Freudian psychology, long-term memory would be called the preconscious and unconscious. This information is largely outside of our awareness, but can be called into working memory to be used when needed. Some of this information is fairly easy to recall, while other memories are much more difficult to access.

TEXT 22. **THINKING**

Thinking is a mental process which allows beings to **model** the world, and so to deal with it effectively according to their goals, plans, **ends** and desires. Words referring to similar concepts and processes include cognition, **sentience**, consciousness, idea, and imagination.

Thinking involves **manipulation** of information, as when we **form** concepts, engage in problem solving, reason and make decisions. Thinking is a higher cognitive function and the analysis of thinking processes is part of cognitive psychology.

The basic process of the human mind reflect a process of pattern **matching** or rather **recognition**. In a "moment of **reflection**", new situations and new experiences are judged against recalled ones and judgments are made. In order to make these judgments, the intellect maintains present experience and **sorts** relevant past experience. It does this while keeping present and past experience distinct and separate. The intellect can mix, match, merge, sift, and **sort** concepts, perceptions, and experience. This process is called **reasoning**. Logic is the science of **reasoning**. The awareness of this process of reasoning is access to consciousness.

Conceptualization

Thinking can be modeled by a field. Patterns are formed and judgments are made within the field. Some philosophers believe the entire field is conscious. They say consciousness creates thinking, thinking and other **brain processes** do not create consciousness. Other scientists think of it as a workspace. Some philosophers have said they do not have a clue as to how we are aware of our thinking. A thought may be an idea, an image, a sound or even an emotional feeling that arises from the brain.

TEXT 23**. WHAT IS MOTIVATION?**

Motivation is defined as the process that initiates, guides and maintains goal-oriented behaviors. Motivation is what causes us to act, whether it is getting a glass of water to reduce thirst or reading a book to gain knowledge. It involves the biological, emotional, social and cognitive forces that activate behavior. In everyday usage, the term *motivation* is frequently used to describe *why* a person does something. For example, you might say that a student is so motivated to get into a clinical psychology program that she spends every night studying.

Components of Motivation

There are three major components to motivation: activation, persistence and intensity. Activation involves the decision to initiate a behavior, such as enrolling in a psychology class. Persistence is the continued effort toward a goal even though obstacles may exist, such as taking more psychology courses in order to earn a degree although it requires a significant investment of time, energy and resources. Finally, intensity can be seen in the concentration and vigor that goes into pursuing a goal. For example, one student might coast by without much effort, while another student will study regularly, participate in discussions and take advantage of research opportunities outside of class.

Extrinsic Vs. Intrinsic Motivation

Different types of motivation are frequently described as being either extrinsic or intrinsic. Extrinsic motivations are those that arise from outside of the individual and often involve rewards such as trophies, money, social recognition or praise. Intrinsic motivations are those that arise from within the individual, such as doing a complicated cross-word puzzle purely for the personal gratification of solving a problem.

Motivation is the force that initiates, guides and maintains goal-oriented behaviors. It is what causes us to take action, whether to grab a snack to reduce hunger or enroll in college to earn a degree. The forces that lie beneath motivation can be biological, social, emotional or cognitive in nature.

Researchers have developed a number of different theories to explain motivation. Each individual theory tends to be rather limited in scope. However, by looking at the key ideas behind each theory, you can gain a better understanding of motivation as a whole.

TEXT 24. **WHAT ARE EMOTIONS?**

Emotions seem to rule our daily lives. We make decisions based on whether we are happy, angry, sad, bored, or frustrated. We choose activities and hobbies based on the emotions they incite.

What exactly is an emotion? An emotion is a complex psychological state that involves three distinct components: a *subjective experience*, a *physiological response*, and a *behavioral* or *expressive response*. In addition to understanding exactly what emotions are, researchers have also tried to identify and classify the different types of emotions. In 1972, psychologist Paul Eckman suggested that there are six basic emotions that are universal throughout human cultures: fear, disgust, anger, surprise, happiness, and sadness. In 1999, he expanded this list to include a number of other basic emotions including embarrassment, excitement, contempt, shame, pride, satisfaction, and amusement.

During the 1980s, Robert Plutchik introduced another emotion classification system known as the "wheel of emotions." This model demonstrated how different emotions can be combined or mixed together, much the way an artist mixes primary colors to create other colors. Plutchik suggested that there are 8 primary emotional dimensions: happiness vs. sadness, anger vs. fear, trust vs. disgust, and surprise vs. anticipation. These emotions can then be combined in a variety of ways. For example, happiness and anticipation might combine to create excitement. In order to better understand what emotions are, let's focus on their three key elements.

The Subjective Experience

While experts believe that there are a number of basic universal emotions that are experienced by people all over the world regardless of background or culture, researchers also believe that the experience of emotion can be highly subjective. While we might have broad labels for certain emotions such as 'angry,' 'sad,' or 'happy,' your own unique experience of these emotions is probably much more multi-dimensional. Consider anger. Is all anger the same? Your own experience might range from mild annoyance to blinding rage.

Plus, we don't always experience 'pure' forms of each emotion. Mixed emotions over different events or situations in our lives are common. When faced with starting a new job, you might feel both excited and nervous. Getting married or having a child might be marked by a wide range of emotions ranging from joy to anxiety. These emotions might occur simultaneously, or you might feel them one after another.

The Physiological Response

If you've ever felt your stomach lurch from anxiety or your heart palpate with fear, then you realize that emotions also cause strong physiological reactions. Many of the physical reactions you experience during an emotion such as sweating palms, racing heartbeat, or rapid breathing are controlled by the sympathetic nervous system, a branch of the autonomic nervous system. The autonomic nervous system controls involuntary body responses such as blood flow and digestion. The sympathetic nervous system is charged with controlling the body's fight-or-flight reactions. When facing a threat, these responses automatically prepare your body to flee from danger or face the threat head-on.

While early studies of the physiology of emotion tended to focus on these autonomic responses, more recent research has targeted the brain's role in emotions. Brain scans have shown that the amygdala, part of the limbic system, plays an important role in emotion and fear in particular. The amygdala itself is a tiny, almond-shaped structure that has been linked to motivational states such as hunger and thirst as well as memory and emotion. Researchers have used brain imaging to show that when people are shown threatening images, the amygdala becomes activated. Damage to the amygdala has also been shown to impair the fear response.

The Behavioral Response

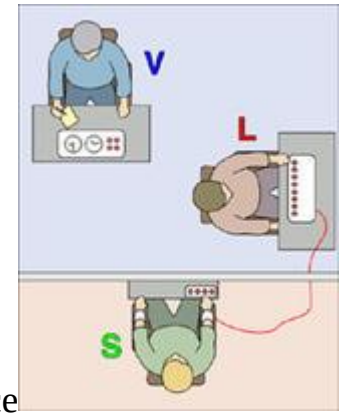
The final component is perhaps one that you are most familiar with – the actual expression of emotion. We spend a significant amount of time interpreting the emotional expressions of the people around us. Our ability to accurately understand these expressions is tied to what psychologists call emotional

intelligence and these expressions play a major part in our overall body language. Researchers believe that many expressions are universal, such as a smile indicating happiness or pleasure or a frown indicating sadness or displeasure. Cultural rules also play an important role in how we express and interpret emotions. In Japan, for example, people tend to mask displays of fear or disgust when in the presence of authority figure.

ADDITIONAL READING

FAMOUS PSYCHOLOGY EXPERIMENTS. Psychology is filled with famous examples of fascinating and even down-right odd experiments. Learn more about some of the classic studies and experiments in psychology.

TEXT 1**. MILGRAM OBEDIENCE EXPERIMENT**



The Perils of Obedience

"The social psychology of this century reveals a major lesson: often it is not so much the kind of person a man is as the kind of situation in which he finds himself that determines how he will act." –Stanley Milgram, 1974

If a person in a position of authority ordered you to deliver a 400-volt electrical shock to another person, would you follow orders? Most people would answer this question with an adamant no, but Yale University psychologist Stanley Milgram conducted a series of obedience experiments during the 1960s that

demonstrated surprising results. These experiments offer a powerful and disturbing look into the power of authority and obedience.

Introduction to the Milgram's Experiment

Milgram started his experiments in 1961, shortly after the trial of the World War II criminal Adolph Eichmann had begun. Eichmann's defense that he was simply following instructions when he ordered the deaths of millions of Jews roused Milgram's interest. In his 1974 book *Obedience to Authority*, Milgram posed the question, "Could it be that Eichmann and his million accomplices in the Holocaust were just following orders? Could we call them all accomplices?"

Method Used in the Milgram's Experiment

The participants in the Milgram experiment were 40 men recruited using newspaper ads. In exchange for their participation, each person was paid $4.50.

Milgram developed an intimidating shock generator, with shock levels starting at 30 volts and increasing in 15-volt increments all the way up to 450 volts. The many switches were labeled with terms including "slight shock," "moderate shock" and "danger: severe shock." The final two switches were labeled simply with an ominous "XXX."

Each participant took the role of a "teacher" who would then deliver a shock to the "student" every time an incorrect answer was produced. While the participant believed that he was delivering real shocks to the student, the student was actually a confederate in the experiment who was simply pretending to be shocked.

As the experiment progressed, the participant would hear the learner plead to be released or even complain about a heart condition. Once the 300-volt level had been reached, the learner banged on the wall and demanded to be released. Beyond this point, the learner became completely silent and refused to answer any more questions. The experimenter then instructed the participant to treat this silence as an incorrect response and deliver a further shock.

Most participants asked the experimenter whether they should continue. The experimenter issued a series of commands to prod the participant along:

1. "Please continue."
2. "The experiment requires that you continue."
3. "It is absolutely essential that you continue."
4. "You have no other choice, you must go on."

Results of the Milgram Experiment

The level of shock that the participant was willing to deliver was used as the measure of obedience. How far do you think that most participants were willing to go? When Milgram posed this question to a group of Yale University students, it was predicted that no more than 3 out of 100 participants would deliver the maximum shock. In reality, 65% of the participants in Milgram's study delivered the maximum shocks.

Of the 40 participants in the study, 26 delivered the maximum shocks while 14 stopped before reaching the highest levels. It is important to note that many of the subjects became extremely agitated, distraught and angry at the experimenter. Yet they continued to follow orders all the way to the end.

Because of concerns about the amount of anxiety experienced by many of the participants, all subjects were debriefed at the end of the experiment to explain the procedures and the use of deception. However, many critics of the study have argued that many of the participants were still confused about the exact nature of the experiment. Milgram later surveyed the participants and found that 84% were glad to have participated, while only 1% regretted their involvement.

Discussion of the Milgram Experiment

While Milgram's research raised serious ethical questions about the use of human subjects in psychology experiments, his results have also been consistently replicated in further experiments. Thomas Blass (1999) reviewed further research on obedience and found that Milgram's findings hold true in other experiments.

Why did so many of the participants in this experiment perform a seemingly sadistic act on the instruction of an authority figure? According to Milgram, there are a number of situational factors that can explain such high levels of obedience:

- ✓ The physical presence of an authority figure dramatically increased compliance.
- ✓ The fact that the study was sponsored by Yale (a trusted and authoritative academic institution) led many participants to believe that the experiment must be safe.
- ✓ The selection of teacher and learner status seemed random.
- ✓ Participants assumed that the experimenter was a competent expert.
- ✓ The shocks were said to be painful, not dangerous.

Later experiments conducted by Milgram indicated that the presence of rebellious peers dramatically reduced obedience levels. When other people refused to go along with the experimenters orders, 36 out of 40 participants refused to deliver the maximum shocks.

"Ordinary people, simply doing their jobs, and without any particular hostility on their part, can become agents in a terrible destructive process. Moreover, even when the destructive effects of their work become patently clear, and they are asked to carry out actions incompatible with fundamental standards of morality, relatively few people have the resources needed to resist authority" (Milgram, 1974).

Milgram's experiment has become a classic in psychology, demonstrating the dangers of obedience. While this experiment suggests that situational variables have a stronger sway than personality factors in determining obedience, other psychologists argue that obedience is heavily influenced by both external and internal factors, such as personal beliefs and overall temperament.

TEXT 2. **STANFORD PRISON EXPERIMENT.**

In 1971, psychologist Philip Zimbardo and his colleagues set out to create an experiment that looked at the impact of becoming a prisoner or prison guard. Zimbardo, a former classmate of Stanley Milgram (who is best-known for his famous obedience experiment), was interested in expanding upon Milgram's research. He wanted to further investigate the impact of situational variables on human behavior.

The question the researchers asked was how would the participants react when placed in a simulated prison environment. "Suppose you had only kids who were normally healthy, psychologically and physically, and they knew they would be going into a prison-like environment and that some of their civil rights would be sacrificed. Would those good people, put in that bad, evil place—would their goodness triumph?" Zimbardo explained in one interview.

The Participants

The researchers set up a mock prison in the basement of Standford University's psychology building, and then selected 24 undergraduate students to play the roles of both prisoners and guards. The participants were selected from a larger group of 70 volunteers because they had no criminal background, lacked psychological issues and had no major medical conditions. The volunteers agreed to participate for a one- to two-week period in exchange for $15 a day.

The Setting and Procedures

The simulated prison included three six by nine foot prison cells. Each cell held three prisoners and included three cots. Other rooms across from the cells were utilized for the prison guards and warden. One very small space was designated as the solitary confinement room, and yet another small room served as the prison yard.

The 24 volunteers were then randomly assigned to either the prisoner group or the guard group. Prisoners were to remain in the mock prison 24-hours a day for the duration of the study. Guards, on the other hand, were assigned to work in three-man teams for eight-hour shifts. After each shift, guards were allowed to

return to their homes until their next shift. Researchers were able to observe the behavior of the prisoners and guards using hidden cameras and microphones.

Results of the Stanford Prison Experiment

While the Stanford Prison Experiment was originally slated to last 14 days, it had to be stopped after just six days due to what was happening to the student participants. The guards became abusive and the prisoners began to show signs of extreme stress and anxiety.

While the prisoners and guards were allowed to interact in any way they wanted, the interactions were generally hostile or even dehumanizing. The guards began to behave in ways that were aggressive and abusive toward the prisoners, while the prisoners became passive and depressed. Five of the prisoners began to experience such severe negative emotions, including crying and acute anxiety that they had to be released from the study early.

Even the researchers themselves began to lose sight of the reality of the situation. Zimbardo, who acted as the prison warden, overlooked the abusive behavior of the prison guards until graduate student Christina Maslach voiced objections to the conditions in the simulated prison and the morality of continuing the experiment.

"Only a few people were able to resist the situational temptations to yield to power and dominance while maintaining some semblance of morality and decency; obviously I was not among that noble class," Zimbardo later wrote in his book *The Lucifer Effect*.

What Do the Results of the Stanford Prison Experiment Mean?

According to Zimbardo and his colleagues, the Stanford Prison Experiment demonstrates the powerful role that the situation can play in human behavior. Because the guards were placed in a position of power, they began to behave in ways they would not normally act in their everyday lives or in other situations. The prisoners, placed in a situation where they had no real control, became passive and depressed.

Criticisms of the Stanford Prison Experiment

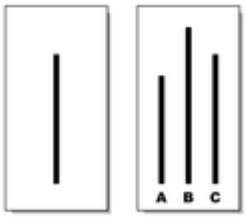
The Stanford Prison Experiment is frequently cited as an example of unethical research. The experiment could not be replicated by researchers today because it fails to meet the standards established by numerous ethical codes, including the Ethics Code of the American Psychological Association. Zimbardo acknowledges the ethical problems with the study, suggesting that "although we ended the study a week earlier than planned, we did not end it soon enough."

Other critics suggest that the study lacks generalizability due to a variety of factors. The unrepresentative sample of participants (mostly white and middle class males) makes it difficult to apply the results to a wider population.

The study is also criticized for its lack of ecological validity. While the researchers did their best to recreate a prison setting, it is simply not possible to perfectly mimic all of the environmental and situational variables of prison life.

Despite some of the criticism, the Stanford Prison Experiment remains an important study in our understanding of how the situation can influence human behavior.

TEXT 3**. ASCH CONFORMITY EXPERIMENTS**



Line Test from the Asch Conformity Experiment

Do you think of yourself as a conformist or a non-conformist? If you are like most people, you probably believe that you are non-conformist enough to stand up to a group when you know you are right, but conformist enough to blend in with the rest of your peers.

Imagine yourself in this situation: You've signed up to participate in a psychology experiment in which you are asked to complete a vision test. Seated in a room with the other participants, you are shown a line segment and then asked to

choose the matching line from a group three segments of different lengths. The experimenter asks each participant individually to select the matching line segment. On some occasions everyone in the group chooses the correct line, but occasionally, the other participants unanimously declare that a different line is actually the correct match.

So what do you do when the experimenter asks you which line is the right match? Do you go with your initial response, or do you choose to conform to the rest of the group?

What Were the Asch Conformity Experiments?

In psychological terms, conformity refers to an individual's tendency to follow the unspoken rules or behaviors of the social group to which he or she belongs. Researchers have long been interested in the degree to which people follow or rebel against social norms. During the 1950s, psychologist Solomon Asch conducted a series of experiments designed to demonstrate the power of conformity in groups.

In Asch's experiments, students were told that they were participating in a 'vision test.' Unbeknownst to the subject, the other participants in the experiment were all confederates, or assistants of the experimenter. At first, the confederates answered the questions correctly, but eventually began providing incorrect answers.

Results of the Asch Conformity Experiments:

Nearly 75 percent of the participants in the conformity experiments went along with the rest of the group at least one time. After combining the trials, the results indicated that participants conformed to the incorrect group answer approximately one-third of the time. In order to ensure that participants were able to accurately gauge the length of the lines, participants were asked to individually write down the correct match. According to these results, participants were very accurate in their line judgments, choosing the correct answer 98 percent of the time.

The experiments also looked at the effect that the number of people present in the group had on conformity. When just one other confederate was present, there was virtually no impact on participants' answers. The presence of two confederates had only a tiny effect. The level of conformity seen with three or more confederates was far more significant.

Asch also found that having one of the confederates give the correct answer while the rest of the confederates gave the incorrect answer dramatically lowered conformity. In this situation, just five to ten percent of the participants conformed to the rest of the group. Later studies have also supported this finding, suggesting that having social support is an important tool in combating conformity.

What Do the Results of the Asch Conformity Experiments Indicate?

At the conclusion of the experiments, participants were asked why they had gone along with the rest of the group. In most cases, the students stated that while they knew the rest of the group was wrong, they did not want to risk facing ridicule. A few of the participants suggested that they actually believed the other members of the group were correct in their answers.

These results suggest that conformity can be influenced both by a need to fit in and a belief that other people are smarter or better informed. Given the level of conformity seen in Asch's experiments, conformity can be even stronger in real-life situations where stimuli are more ambiguous or more difficult to judge.

Criticisms of the Asch Conformity Experiments

One of the major criticisms of Asch's conformity experiments centers on the reasons why participants choose to conform. According to some critics, individuals may have actually been motivated to avoid conflict, rather than an actual desire to conform to the rest of the group.

Another criticism is that the results of the experiment in the lab may not generalize to real-world situations. However, many social psychology experts believe that while real-world situations may not be as clear cut as they are in the lab, the actual social pressure to conform is probably much greater, which can dramatically increase conformist behaviors.

Contribution to Psychology

The Asch conformity experiments are among the most famous in psychology's history and have inspired a wealth of additional research on conformity and group behavior. This research has provided important insight into how, why and when people conform and the effects of social pressure on behavior.

TEXT 4**. HARLOW SOCIAL ISOLATION EXPERIMENT**

The Science of Love: Harry Harlow & the Nature of Affection

During the first half of the 20th century, many psychologists believed that showing affection towards children was merely a sentimental gesture that served no real purpose.

Behaviorist John B. Watson once even went so far as to warn parents, "When you are tempted to pet your child, remember that mother’s love is a dangerous instrument." According to many thinkers of the day, affection would only spread diseases and lead to adult psychological problems.

During this time, psychologists were motivated to prove their field as a rigorous science. The behaviorist movement dominated psychology and urged researchers to study only observable and measurable behaviors. An American psychologist named Harry Harlow, however, became interested in studying a topic that was not so easy to quantify and measure: love.

In a series of controversial experiments conducted in 1960s, Harlow demonstrated the powerful effects of love. By showing the devastating effects of deprivation on young rhesus monkeys, Harlow revealed the importance of a mother's love for healthy childhood development. His experiments were often unethical and shockingly cruel, yet they uncovered fundamental truths that have heavily influenced our understanding of child development.

The Wire Mother Experiment:

Harlow noted that very little attention had been devoted to the experimental research of love. "Because of the dearth of experimentation, theories about the

fundamental nature of affection have evolved at the level of observation, intuition, and discerning guesswork, whether these have been proposed by psychologists, sociologists, anthropologists, physicians, or psychoanalyst," he noted (Harlow, 1958).

Many of the existing theories of love centered on the idea that the earliest attachment between a mother and child was merely a means for the child to obtain food, relieve thirst, and avoid pain. Harlow, however, believed that this behavioral view of mother-child attachment was an inadequate explanation.

Harlow's most famous experiment involved giving young rhesus monkeys a choice between two different "mothers." One was made of soft terrycloth, but provided no food. The other was made of wire, but provided food from an attached baby bottle.

Harlow removed young monkeys from their natural mothers a few hours after birth and left them to be "raised" by these mother surrogates. The experiment demonstrated that the baby monkeys spent significantly more time with their cloth mother than with their wire mother. "These data make it obvious that contact comfort is a variable of overwhelming importance in the development of affectional response, whereas lactation is a variable of negligible importance," Harlow explained (1958).

Fear, Security, and Attachment:

In a later experiment, Harlow demonstrated that young monkeys would also turn to their cloth surrogate mother for comfort and security. Using a strange situation similar to the one created by attachment researcher Mary Ainsworth, Harlow allowed the young monkeys to explore a room either in the presence of their surrogate mother or in her absence. Monkeys in the presence of their mother would use her as a secure base to explore the room.

When the surrogate mothers were removed from the room, the effects were dramatic. The young monkeys no longer had their secure base to explore the room and would often freeze up, crouch, rock, scream, and cry.

The Impact of Harlow's Research:

While many experts derided the importance of parental love and affection, Harlow’s experiments offered irrefutable proof that love is vital for normal childhood development. Additional experiments by Harlow revealed the long-term devastation caused by deprivation, leading to profound psychological and emotional distress and even death. Harlow’s work, as well as important research by psychologists John Bowlby and Mary Ainsworth, helped influence key changes in how orphanages, adoption agencies, social services groups and child care providers approached the care of children.

While Harry Harlow's work led to acclaim and generated a wealth of research on love, affection, and interpersonal relationships, his own personal life soon began to crumble. After the terminal illness of his wife, he became engulfed by alcoholism and depression, eventually becoming estranged from his own children. Colleagues frequently described him as sarcastic, mean-spirited, misanthropic, chauvinistic, and cruel. Yet Harlow's enduring legacy reinforced the importance of emotional support, affection, and love in the development of children.

TEXT 5. **LITTLE ALBERT EXPERIMENT**

The "Little Albert" experiment was a famous psychology experiment conducted by behaviorist John B. Watson and graduate student Rosalie Raynor. Previously, Russian physiologist Ivan Pavlov had conducted experiments demonstrating the conditioning process in dogs. Watson was interested in taking

Pavlov's research further to show that emotional reactions could be classically conditioned in people.

The participant in the experiment was a child that Watson and Rayner called "Albert B.", but is known popularly today as Little Albert. Around the age of nine months, Watson and Rayner exposed the child to a series of stimuli including a white rat, a rabbit, a monkey, masks and burning newspapers and observed the boy's reactions. The boy initially showed no fear of any of the objects he was shown.

The next time Albert was exposed the rat, Watson made a loud noise by hitting a metal pipe with a hammer. Naturally, the child began to cry after hearing the loud noise. After repeatedly pairing the white rat with the loud noise, Albert began to cry simply after seeing the rat.

Watson and Rayner wrote: "The instant the rat was shown, the baby began to cry. Almost instantly he turned sharply to the left, fell over on [his] left side, raised himself on all fours and began to crawl away so rapidly that he was caught with difficulty before reaching the edge of the table."

Elements of Classical Conditioning in the Little Albert Experiment

The Little Albert experiment presents an example of how classical conditioning can be used to condition an emotional response.

Neutral Stimulus: The white rat

Unconditioned Stimulus: The loud noise

Unconditioned Response: Fear

Conditioned Stimulus: The white rat

Conditioned Response: Fear

Stimulus Generalization in the Little Albert Experiment.

In addition to demonstrating that emotional responses could be conditioned in humans, Watson and Rayner also observed that stimulus generalization had occurred. After conditioning, Albert feared not just the white rat, but a wide variety

of similar white objects as well. His fear included other furry objects including Raynor's fur coat and Watson wearing a Santa Claus beard.

Criticisms of the Little Albert Experiment.

While the experiment is one of psychology's most famous and is included in nearly every introductory psychology course, it has also been criticized widely for several reasons. First, the experimental design and process was not carefully constructed. Watson and Rayner did not develop an object means to evaluate Albert's reactions, instead relying on their own subjective interpretations. Secondly, the experiment also raises many ethical concerns. The Little Albert experiment could not be conducted by today's standards because it would be unethical.

What Ever Happened to Little Albert?

The question of what happened to Little Albert has long been one of psychology's mysteries. Watson and Rayner were unable to attempt to eliminate the boy's conditioned fear because he moved with his mother shortly after the experiment ended. Some envisioned the boy growing into a man with a strange phobia of white, furry objects.

Recently, however, the true identity and fate of the boy known as Little Albert was discovered. As reported in *American Psychologist*, a seven-year search led by psychologist Hall P. Beck led to the discovery. After tracking down the location of the original experiments and the real identity of the boy's mother, it was discovered that Little Albert was actually a boy named Douglas Merritte.

The story does not have a happy ending, however. Douglas died at the age of six on May 10, 1925 of hydrocephalus, a build-up of fluid in his brain. "Our search of seven years was longer than the little boy’s life," Beck wrote of the discovery.

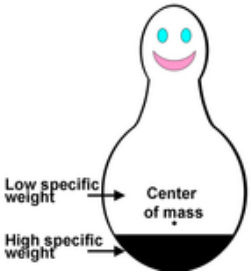
In 2012, Beck and Alan J. Fridlund published their discovery that Douglas Merritte was not the "healthy" and "normal" child that Watson described in his 1920 experiment. Instead, they found that Merritte had suffered from hydrocephalus since birth and presented convincing evidence that Watson knew about the boy's condition and intentionally misrepresented the state of the child's

health. These findings not only cast a shadow over Watson's legacy, they also deepen the ethical and moral issues of this well-known experiment.

In 2014, doubt was cast over Beck and Fridlund's findings when researchers presented evidence that a boy by the name of William Barger was the real Little Albert. Barger was born on the same day as Merritte to a wet-nurse who worked at the same hospital as Merritte's mother. While his first name was William, he was known for all his entire life by his middle name, Albert. While experts continue to debate the true identity of the boy at the center of Watson's experiment, there is little doubt that Little Albert left a lasting impression of the field of psychology.

TEXT 6. **BOBO DOLL EXPERIMENT**

(Bandura's Famous Experiment on Aggression)



Does the violence that children observe on television, movies, and video games lead them to behavior aggressively? This is a hot question today, but it was also of great interest 50 years ago when a psychologist led an experiment to determine how kids learn aggression through observation. Aggression lies at the root of many social ills ranging from interpersonal violence to war. It is little wonder then that the subject is one of the most studied topics within psychology. Social psychology is the subfield devoted to the study of human interaction and group behavior, and it is the scientists working in this field who have provided much of the research on human aggression.

In a famous and influential experiment known as the Bobo doll experiment, Albert Bandura and his colleagues were able to demonstrate one of the ways in

which children learn aggression. Bandura's social learning theory proposes that learning occurs through observation and interaction with other people.

Bandura's Predictions. The experiment involved exposing children to two different adult models; an aggressive model and a non-aggressive one. After witnessing the adult's behavior, the children would then be placed in a room without the model and were observed to see if they would imitate the behavior they had witnessed earlier.

Bandura made several predictions about what would occur:

- ✓ He predicted that children who observed an adult acting aggressively would be likely to act aggressively even when the adult model was not present.
- ✓ The children who observed the non-aggressive adult model would be less aggressive than the children who observed the aggressive model; the non-aggressive exposure group would also be less aggressive than the control group.
- ✓ Children would be more likely to imitate models of the same-sex rather than opposite-sex models.
- ✓ Boys would behave more aggressively than girls.

Method. The participants for the experiment were 36 boys and 36 girls enrolled at the Stanford University Nursery School. The children ranged in age between 3 and almost 6 years, and the average participant age was 4 years 4 months.

There were a total of eight experimental groups. Out of these participants, 24 were assigned to a control group that received no treatment. The rest of the children were then divided into two groups of 24 participants each. One of the experimental groups was then exposed to aggressive models, while the other 24 children were exposed to non-aggressive models.

Finally, these groups were divided again into groups of boys and girls. Each of these groups was then divided so that half of the participants were exposed to a same-sex adult model and the other half was exposed to an opposite-sex adult model.

Before conducting the experiment, Bandura also assessed the children's existing levels of aggression. Groups were then matched equally so that they had an average level of aggression.

Procedure. Each child was tested individually to ensure that behavior would not be influenced by others children. The child was first brought into a playroom where there were a number of different activities to engage in. The experimenter then invited an adult model into the playroom who was encouraged to sit at a table and join in the activities. Over a ten minute period, the adults then began to play with a set of tinker toys. In the non-aggressive condition, the adult model simply played with the toy and ignored the Bobo doll for the entire period. In the aggressive model condition, however, the adult model would violently attack the Bobo doll.

"The model laid the Bobo on its side, sat on it, and punched it repeatedly in the nose. The model then raised the Bobo doll, picked up the mallet, and struck the doll in the head. Following the mallet aggression, the model tossed the doll up in the air aggressively, and kicked it about the room. This sequence of physically aggressive acts was repeated three times, interspersed with verbally aggressive responses."

In addition to the physical aggression, the adult model also used verbally aggressive phrases such as "Kick him". The model also added two non-aggressive phrases.

After the ten-minute exposure to the adult model, the child was then taken to another room that contained a number of appealing toys including a doll set, fire engine, and toy airplane. However, children were told that they were not allowed to play with any of these tempting toys. The purpose of this was to build up frustration levels among the children.

Finally, each child was taken to the last experimental room. This room contained a number of "aggressive" toys including a mallet, a tether ball with a face painted on it, dart guns, and, of course, a Bobo doll. The room also included several "non-aggressive" toys including crayons, paper, dolls, plastic animals, and

trucks. The children were then allowed to play in this room for a period of 20 minutes while raters observed each child's behavior from behind a one-way mirror and judged each child levels of aggression.

Results. The results of the experiment supported three of the four original predictions. Children exposed to the violet model tended to imitate the exact behavior they had observed when the adult was no longer present. Bandura and his colleagues had also predicted that children in the non-aggressive group would behave less aggressively than those in the control group. The results indicated that while children of both genders in the non-aggressive group did exhibit less aggression than the control group, boys who had observed an opposite-sex model behavior non-aggressively were more likely than those in the control group to engage in violence.

There were important gender differences when it came to whether a same-sex or opposite-sex model was observed. Boy who observed an adult male behaving violently were more influenced than those who had observed a female model behavior aggressively. Interestingly, the experimenters found in the same-sex aggressive groups, boys were more likely to imitate physical acts of violence while girls were more likely to imitate verbal aggression. The researchers were also correct in their prediction that boys would behave more aggressively than girls. Boys engaged in more than twice as many acts of aggression than the girls.

Discussion. The results of the Bobo doll experiment supported Bandura's social learning theory. Bandura and his colleagues believed that the experiment demonstrates how specific behaviors can be learned through observation and imitation. The authors also suggested that "social imitation may hasten or short-cut the acquisition of new behaviors without the necessity of reinforcing successive approximations as suggested by Skinner."

According to Bandura, the adult's violent behavior toward the doll led children to believe that such actions were acceptable. He also suggested that as a result, children may be more inclined to respond to frustration with aggression in the future. In a follow-up study conducted in 1965, Bandura found that while

children were more likely to imitate aggressive behavior if the adult model was rewarded for his or her actions, they were far less likely to imitate if they saw the adult model being punished or reprimanded for their hostile behavior.

Criticisms. As with any experiment, the Bobo doll study is not without criticisms. Because the experiment took place in a lab setting, some critics suggest that results observed in this type of location may not be indicative of what takes place in the real world. The study might suffer from selection bias. All participants were drawn from a narrow pool of students who share the same racial and socioeconomic background. This makes it difficult to generalize the results to a larger, more diverse population. Since data was collected immediately, it is also difficult to know what the long-term impact might have been. Acting violently toward a doll is a lot different that displaying aggression or violence against another human being in a real world setting. It has also been suggested that children were not actually motivated to display aggression when they hit the Bobo doll; instead, they may have simply been trying to please the adults. Some critics argue that the study itself is unethical. By manipulating the children into behaving aggressively, they argue, the experimenters were essentially teaching the children to be aggressive.

Final Thoughts. Bandura's experiment remains one of the most well-known studies in psychology. Today, social psychologists continue to study the impact of observed violence on children's behavior. In the half-century since the Bobo doll experiment, there have been hundreds of studies on how observing violence impacts children's behavior. Today, researchers continue to ponder the question of whether the violence children witness on television in the movies translates to aggressive or violent behavior in the real-world.

TEXT 7. SCOPE OF PSYCHOLOGY

Put the words into their correct spaces in the text:

Nervous, derived, investigation, functions, emotionally, soul, behaviour, mental, throughout, strategic.

SCOPE OF PSYCHOLOGY

Psychology as a science studies ……..... (1) activity and human behaviour. Psychologists study basic ……..…… (2) such as learning, memory, language, thinking, emotions and motives. They investigate development …….. (3) the life span from birth to death. They are involved in mental and physical care. They treat people who are ……..... (4) distressed. Psychology occupies a ……... (5) position between natural and social sciences on the one hand, and between sciences and humanities, on the other. The word "psychology" is ……..... (6) from the Greek word meaning "study of the mind and …….. (7)" So in the definition of psychology there are three basic words: "science", "……..……..... (8), "mental processes".

"Science" means rational …….... (9) of processes and phenomena. By "behaviour" psychologists mean everything that people and animals do: action, emotions, ways of communication, developmental processes. "Mental processes" characterize the work of the mind and the …… (10) system.

TEXT 8. 7 MYTHS ABOUT THE BRAIN. SEPARATING FACT FROM FICTION

The human brain is amazing and sometimes mysterious. While researchers are still uncovering the secrets of how the brain works, they have discovered plenty of information about what goes on inside your noggin. Unfortunately, there are still

a lot of brain myths out there. The following are just a few of the many myths about the brain.

Myth 1: You only use 10 percent of your brain.

You've probably heard this oft-cited bit of information several times, but constant repetition does not make it any more accurate. People often use this popular urban legend to imply that the mind is capable of much greater things, such as dramatically increased intelligence, psychic abilities, or even telekinesis. After all, if we can do all the things we do using only 10 percent of our brains, just imagine what we could accomplish if we used the remaining 90 percent.

Reality check: Research suggests that all areas of the brain perform some type of function. If the 10 percent myth were true, brain damage would be far less likely – after all, we would really only have to worry about that tiny 10 percent of our brains being injured. The fact is that damage to even a small area of the brain can result in profound consequences to both cognition and functioning. Brain imaging technologies have also demonstrated that the entire brain shows levels of activity, even during sleep.

Myth 2: Brain damage is permanent.

The brain is a fragile thing and can be damaged by things such as injury, stroke, or disease. This damage can result in a range of consequences, from mild disruptions in cognitive abilities to complete impairment. Brain damage can be devastating, but is it always permanent?

Reality check: While we often tend to think of brain injuries as lasting, a person's ability to recover from such damage depends upon the severity and the location of the injury. For example, a blow to the head during a football game might lead to a concussion. While this can be quite serious, most people are able to recover when given time to heal. A severe stroke, on the other hand, can result in dire consequences to the brain that can very well be permanent.

However, it is important to remember that the human brain has an impressive amount of plasticity. Even following a serious brain event, such as a

stroke, the brain can often heal itself over time and form new connections within the brain.

Myth 3: People are either "right-brained" or "left-brained."

Have you ever heard someone describe themselves as either left-brained or right-brained? This stems from the popular notion that people are either dominated by their right or left brain hemispheres. According to this idea, people who are "right-brained" tend to be more creative and expressive, while those who are "left-brained tend to be more analytical and logical.

Reality Check: While experts do recognize that there is lateralization of brain function (that is, certain types of tasks and thinking tend to be more associated with a particular region of the brain), no one is fully right-brained or left-brained. In fact, we tend to do better at tasks when the entire brain is utilized, even for things that are typically associated with a certain area of the brain.

Myth 4: Humans have the biggest brains.

The human brain is quite large in proportion to body size, but another common misconception is that humans have the largest brains of any organism. How big is the human brain? How does it compare to other species?

Reality Check: The average adult has a brain weighing in at about three pounds and measuring up to about 15 centimeters in length. The largest animal brain belongs to that of a sperm whale, weighing in at a whopping 18 pounds! Another large-brained animal is the elephant, with an average brain size of around 11 pounds.

But what about relative brain size in proportion to body size? Humans must certainly have the largest brains in comparison to their body size, right? Once again, this notion is also a myth. Surprisingly, one animal that holds the largest body-size to brain ratios is the shrew, with a brain making up about 10 percent of its body mass.

Myth 5: We are born with all the brain cells we ever have, and once they die, these cells are gone forever.

Traditional wisdom has long suggested that adults only have so many brain cells and that we never form new ones. Once these cells are lost, are they really gone for good?

Reality Check: In recent years, experts have discovered evidence that the human adult brain does indeed form new cells throughout life, even during old age. The process of forming new brain cells is known as neurogenesis and researchers have found that it happens in at least one important region of the brain called the hippocampus.

Myth 6: Drinking alcohol kills brain cells.

Partly related to the myth that we never grow new neurons is the idea that drinking alcohol can lead to cell death in the brain. Drink too much or too often, some people might warn, and you'll lose precious brain cells that you can never get back. We've already learned that adults do indeed get new brain cells throughout life, but could drinking alcohol really kill brain cells?

Reality Check: While excessive or chronic alcohol abuse can certainly have dire health consequences, experts do not believe that drinking causes neurons to die. In fact, research has shown that even binge drinking doesn't actually kill neurons.

Myth 7: There are 100 billion neurons in the human brain.

If you've ever thumbed through a psychology or neuroscience textbook, you have probably read that the human brain contains approximately 100 billion neurons. How accurate is this oft-repeated figure? Just how many neurons are in the brain?

Reality Check: The estimate of 100 billion neurons has been repeated so often and so long that no one is completely sure where it originated. In 2009, however, one researcher decided to actually count neurons in adult brains and found that the number was just a bit off the mark. Based upon this research, it appears that the human brain contains closer to 85 billion neurons. So while the often-cited number is a few billion too high, 85 billion is still nothing to sneeze at.

TEXT 9. Circadian Rhythms: The Body's "Clock"

All species have a timing mechanism, or 'clock,' that controls periods of activity and inactivity. These clocks are known as circadian rhythms and refer the cycle of physiological and biological processes that fluctuate on a roughly 24-hour timetable. You have probably noticed these tendencies yourself, feeling more energetic and alert during peak periods of the day and more lethargic and run-down at other times of the day.

While many people refer to circadian rhythms as a single process, there are actually a number of body clocks that oscillate throughout the day. For example, mental alertness tends to peak twice in a day at 9AM and 9PM, while physical strength tends to crest at 11AM and 7PM.

How Does Your Body "Keep Time?"

A tiny cluster of approximately 20,000 neurons in the hypothalamus controls your body's many circadian rhythms. This master control center is responsible for acting as your body's internal pacemaker. While the exact mechanisms for how this process works are unclear, environmental cues are important. Sunlight is perhaps the most apparent, controlling our daily sleep-wake schedule.

So how does sunlight affect your circadian rhythms? As the sunlight decreases at the close of the day, the visual system sends signals to the suprachiasmatic nucleus. Next, the SCN sends signals to the pineal gland to increase the produce of the hormone melatonin. This hormone increase helps reduced activity and makes you feel increasingly sleepy.

What Happens When There is No Sunlight?

There has been a considerable amount of research on what happens to circadian rhythms when natural sunlight patterns are interrupted. Clinical research has shown that individuals who are blind from birth frequently have difficulty with their sleep-wake cycle because of the complete lack of environmental light cues. Those who perform shift-work or travel frequently are also subject to having their natural circadian rhythms disrupted.

In some major studies of circadian rhythms, participants stayed in underground units for weeks or even months at a time. Deprived of all natural light cues, the circadian rhythms of these participants began to shift toward a 25-hour schedule rather than the standard 24-hour pattern. Additionally, many of the body's previously synchronized circadian rhythms shifted as well. When exposed to environmental sunlight signals, many of the body's rhythms operate on a very similar schedule. When all natural light cues are removed, these body clocks begin to operate on completely different schedules.

Points to Remember:

- Your circadian rhythms are tied to sunlight cues.
- Disrupting these patterns can lead to poor or difficult sleep.
- Without light signals, people tend to operate on a 25-hour schedule.
- Circadian rhythms also impact body temperature, pain sensitivity, mental alertness, physical strength, and the senses.

TEXT 10. 5 MAJOR DREAM CHARACTERISTICS

Dreams have fascinated artists, philosophers and researchers for thousands of years. However, it was not until fairly recently in history that dreams became the subject of serious scientific study. While dreams can vary considerably, sleep researcher J. Allan Hobson (1988) identified five basic characteristics of dreams:

1. Dreams Often Feature Intense Emotions. One of the major characteristics of dreams is that the emotions experienced in dreams can be intense, painful and acute. People commonly report dreaming about deeply embarrassing situations (i.e. being nude in public) or profoundly terrifying events (i.e. being chased by an attacker). In some instances, these emotions can become so intense that they interrupt the dream or cause the dreamer to wake abruptly. The three most common emotions that become intensified by dreams are anxiety, fear and surprise.

2. Dreams Are Frequently Disorganized and Illogical. Dreams are full of discontinuities, ambiguities and inconsistency, but sometimes these things can lead to downright bizarre dream content. According to Hobson, one of the hallmarks of dreams is "illogical content and organization, in which the unities of time, place and person do not apply, and natural laws are disobeyed." Some examples of illogical dream content includes flying, time travel, talking animals, sudden transformations of both people and objects and sudden shifts in setting.

3. Strange Dream Content Is Accepted Without Question. The odd events and content that occur in dreams are typically accepted without question by the dreaming mind. According to Hobson, the unquestioning acceptance of dream content is due to the strength of our internally generated emotions and perceptions. Within the dream, these strange and illogical events, perceptions and objects are not seen as being out of place. If the dream is remembered upon waking, the content of the dream is seen as odd or even difficult to explain.

4. People Often Experience Bizarre Sensations. Strange sensory experiences are another cardinal characteristic of dreams. The sensation of falling, an inability to move quickly and being unable to control body movements are just a few of the commonly reported sensory experiences that occur during dreams.

5. Dreams Are Difficult to Remember. While memory seems to be intensified within the context of the dream, access to the information contained within the dream diminishes rapidly once the dreamer wakes. Dream researchers estimate that approximately 95% of all dreams are forgotten entirely upon awakening.

Understanding the Characteristics of Dreams

- While many people may familiar with these five common characteristics of dreams, some may be unaware of just how common these experiences are. "Dream characteristics and dream object may be of an everyday nature or altogether fantastic and impossible collages of existing reality; they may behave normally or indulge in the most absurd, improbable or impossible actions in

settings either familiar or bearing only the faintest resemblances to those of real life," Hobson explains.

TEXT 11. WHY DO WE DREAM?

"Dreams are the touchstones of our characters." - Henry David Thoreau

Dreams have fascinated philosophers for thousands of years, but only recently have dreams been subjected to empirical research and concentrated scientific study. Chances are that you've often found yourself puzzling over the mysterious content of a dream, or perhaps you've wondered why you dream at all.

First, let's start by answering a basic question – What is a dream? A dream can include any of the images, thoughts and emotions that are experienced during sleep. Dreams can be extraordinarily vivid or very vague; filled with joyful emotions or frightening imagery; focused and understandable or unclear and confusing.

Why do we dream? What purpose do dreams serve? While many theories have been proposed, no single consensus has emerged. Considering the enormous amount of time we spend in a dreaming state, the fact that researchers do not yet understand the purpose of dreams may seem baffling. However, it is important to consider that science is still unraveling the exact purpose and function of sleep itself.

Some researchers suggest that dreams serve no real purpose, while others believe that dreaming is essential to mental, emotional and physical well-being. Next, let's learn more about some of the most prominent dream theories.

TEXT 12. DREAM INTERPRETATION: WHAT DO DREAMS MEAN?

Dreams can be mysterious, but understanding the meaning of our dreams can be downright baffling. The content of our dreams can shift suddenly, feature

bizarre elements or frighten us with terrifying imagery. The fact that dreams can be so rich and compelling is what causes many to believe that there must be some meaning to our dreams.

While many theories exist to explain why we dream, no one yet fully understands their purpose, let alone how to interpret the meaning of dreams. In fact, some prominent researchers suggest that dreams most likely serve no real purpose.

Despite this, dream interpretation has becoming increasingly popular. While research has not demonstrated a purpose for dreams, many experts believe that dreams do have meaning.

Freud: Dreams as the Road to the Unconscious Mind:

In his book The Interpretation of Dreams, Sigmund Freud suggested that the content of dreams is related to wish fulfillment. Freud believed that the manifest content of a dream, or the actually imagery and events of the dream, served to disguise the latent content, or the unconscious wishes of the dreamer.

Freud also described four elements of this process that he referred to as 'dream work':

Condensation – Many different ideas and concepts are represented within the span of a single dream. Information is condensed into a single thought or image.

Displacement – This element of dream work disguises the emotional meaning of the latent content by confusing the important and insignificant parts of the dream.

Symbolization – This operation also censors the repressed ideas contained in the dream by including objects that are meant to symbolize the latent content of the dream.

Secondary Revision – During this final stage of the dreaming process, Freud suggested that the bizarre elements of the dream are reorganized in order to make the dream comprehensible, thus generating the manifest content of the dream.

Jung: Archetypes and the Collective Unconscious:

While Carl Jung shared some commonalities with Freud, he felt that dreams were more than an expression of repressed wishes. Jung suggested that dreams revealed both the personal and collective unconscious and believed that dreams serve to compensate for parts of the psyche that are underdeveloped in waking life. However, later research by Hall discovered that the traits people exhibit while they awake are also expressed in dreams.

Jung also suggested that archetypes such as the anima, the shadow and the animus are often represented symbolic objects or figures in dreams. These symbols, he believed, represented attitudes that are repressed by the conscious mind. Unlike Freud, who often suggested that specific symbols represents specific unconscious thoughts, Jung believed that dreams can be highly personal and that interpreting these dreams involved knowing a great deal about the individual dreamer.

Hall: Dreams as a Cognitive Process:

Calvin S. Hall proposed that dreams are part of a cognitive process in which dreams serve as 'conceptions' of elements of our personal lives. Hall looked for themes and patterns by analyzing thousands of dream diaries from participants, eventually creating a quantitative coding system that divided the content of dreams into a number of different categories.

According to Hall's theory, interpreting dreams requires knowing:

- The actions of the dreamer within the dream
- The objects and figures in the dream
- The interactions between the dreamer and the characters in the dream
- The dream's setting, transitions and outcome
- The ultimate goal of this dream interpretation is not to understand the dream, however, but to understand the dreamer.

Domhoff: Dreams as a Reflection of Waking Life:

G. William Domhoff is a prominent dream researcher who studied with Calvin Hall at the University of Miami. In large-scale studies on the content of dreams, Domhoff has found that dreams reflect the thoughts and concerns of a

dreamer's waking life. Domhoff suggests a neurocognitive model of dreams in which the process of dreaming results from neurological processes and a system of schemas. Dream content, he suggests, results from these cognitive processes.

Popularizing Dream Interpretation

Since the 1970s, dream interpretation has grown increasingly popular thanks to work by authors such as Ann Faraday. In books such as The Dream Game, Faraday outlined techniques and ideas than anyone can use to interpret their own dreams. Today, consumers can purchase a wide variety of books that offer dream dictionaries, symbol guides and tips for interpreting and understanding dreams.

Dream research will undoubtedly continue to grow and generate interest from people interested in understanding the meaning of their dreams. However, dream expert G. William Domhoff recommends that "...unless you find your dreams fun, intellectually interesting, or artistically inspiring, then feel free to forget your dreams." Others such as Cartwright and Kaszniak propose that dream interpretation may actually reveal more about the interpreter than it does about the meaning of the dream itself.

TEXT 13. SLEEP – STAGES, THEORIES & PROBLEMS WITH SLEEP

From the ancient philosophers to modern pop culture, the nature and significance of sleep is an almost inescapable question. Understanding the sleep process as well and why we sleep is a topic of interest for many, while exploring some of the major problems with sleep is a topic of interest to anyone who has ever spent a restless night tossing and turning.

Why We Sleep:

While there are several different theories to explain why we sleep, scientists are still do not have a hard and fast answer for exactly why we sleep. One of the major theories suggests sleep is important for repair and restoration of the mind and body.

Problems with Sleep:

Anyone who has ever experienced a bout of insomnia knows that falling and staying asleep isn't always so easy. Sleep disorders are a relatively common problem. Severe problems with sleep have even been linked to major depression and even suicide.

Stages of Sleep:

When you think of sleep, you might feel that it is a fairly uniform process. After all, you just fall asleep and that's that, right? Not exactly. In reality, sleep progresses through a number of different stages that are marked by distinctive changes in brain activity.

The invention of the electroencephalograph allowed scientists to study sleep in ways that were not previously possible. During the 1950s, a graduate student named Eugene Aserinsky used this tool to discover what is known today as REM sleep. Further studies of human sleep have demonstrated that sleep progresses through a series of stages in which different brain wave patterns are displayed.

There are two main types of sleep:

- Non-Rapid Eye Movement (NREM) Sleep (also known as quiet sleep)
- Rapid Eye Movement (REM) Sleep (also known as active sleep or paradoxical sleep)

The Beginnings of Sleep

During the earliest phases of sleep, you are still relatively awake and alert. The brain produces what are known as beta waves, which are small and fast. As the brain begins to relax and slow down, slower waves known as alpha waves are produced. During this time when you are not quite asleep, you may experience strange and extremely vivid sensations known as hypnagogic hallucinations. Common examples of this phenomenon include feeling like you are falling or hearing someone call your name.

Another very common event during this period is known as a myoclonic jerk. If you've ever startled suddenly for seemingly no reason at all, then you have

experienced this odd phenomenon. While it may seem unusual, these myoclonic jerks are actually quite common.

Stage 1 is the beginning of the sleep cycle, and is a relatively light stage of sleep. Stage 1 can be considered a transition period between wakefulness and sleep. In Stage 1, the brain produces high amplitude theta waves, which are very slow brain waves. This period of sleep lasts only a brief time (around 5-10 minutes). If you awaken someone during this stage, they might report that they weren't really asleep.

Stage 2 is the second stage of sleep and lasts for approximately 20 minutes. The brain begins to produce bursts of rapid, rhythmic brain wave activity known as sleep spindles. Body temperature starts to decrease and heart rate begins to slow.

Deep, slow brain waves known as delta waves begin to emerge during stage 3 of sleep. Stage 3 is a transitional period between light sleep and a very deep sleep.

Stage 4 is sometimes referred to as delta sleep because of the slow brain waves known as delta waves that occur during this time. Stage 4 is a deep sleep that lasts for approximately 30 minutes. Bed-wetting and sleepwalking are most likely to occur at the end of stage 4 sleep.

Most dreaming occurs during the fifth stage of sleep, known as rapid eye movement (REM) sleep. REM sleep is characterized by eye movement, increased respiration rate and increased brain activity. REM sleep is also referred to as paradoxical sleep because while the brain and other body systems become more active, muscles become more relaxed. Dreaming occurs due because of increased brain activity, but voluntary muscles become paralyzed.

The Sequence of Sleep Stages

It is important to realize, however, that sleep does not progress through these stages in sequence. Sleep begins in stage 1 and progresses into stages 2, 3 and 4. After stage 4 sleep, stage 3 and then stage 2 sleep are repeated before entering REM sleep. Once REM sleep is over, the body usually returns to stage 2 sleep.

Sleep cycles through these stages approximately four or five times throughout the night.

On average, we enter the REM stage approximately 90 minutes after falling asleep. The first cycle of REM sleep might last only a short amount of time, but each cycle becomes longer. REM sleep can last up to an hour as sleep progresses.

TEXT 14. SLEEP DISORDERS

According to the American Psychiatric Association, sleep disorders are major disturbances of normal sleep patterns that lead to distress and disrupt functioning during the day. Not only are sleep disorders extremely common, affecting virtually everyone at some point in their lives, but they can also lead to serious stress and other health consequences.

According to a major survey by the National Sleep Foundation, more than half of Americans reported experiencing at least one symptoms of insomnia several times a week during the previous year. Highlighting another major danger of sleep disorders, the survey also reported that 60 percent of respondents had driven while drowsy during the previous year.

Insomnia is by far the most common sleep disorder, affecting nearly 60 percent of U.S. adults at least one night each week. Common symptoms of insomnia include difficulty getting to sleep and waking before it is time to get up. There are many factors that can contribute to insomnia including stress and underlying medical conditions. Typical treatments include sleeping pills and behavior therapy. Practicing good sleep habits can often be effective for treating mild cases of insomnia.

Sleep apnea is the second most common sleep disorder and affects approximately 20 million Americans. This disorder causes people to stop breathing abruptly while they are asleep. During this brief period, carbon dioxide builds up in the blood and the sleeper wakes suddenly to gasp for breath. The length of time

that the sleeper stop breathing can vary from a few seconds to so long that the individuals skin actually turns blue from oxygen deprivation.

Narcolepsy is a neurological sleep disorder that leads to periods of intense sleepiness during the daytime. People suffering from narcolepsy often experience bouts of overwhelming sleepiness and may fall asleep for brief periods of time during the day. These sleeping periods may last from a few seconds to several minutes and in some cases may last up to an hour or more. Those with narcolepsy can fall asleep in the middle of a conversation, during a meal or even while driving a vehicle.

Affecting as many as 250,000 Americans, narcolepsy is a chronic condition that typically begins during adolescence. In addition to sleepiness, narcolepsy is frequently accompanied by cataplexy, which involves a sudden loss of muscle tone and control that can last seconds or minutes. Other symptoms include hallucinations and paralysis during sleep.

Sleepwalking & Night Terrors. While insomnia and sleep apnea are more common in adults, other sleep disorders such as sleepwalking and night terrors are far more common in young children. Sleepwalking, also known as somnambulism, is characterized by periods of getting out of bed while asleep.

Night terrors are most frequently seen in very young children (between the ages of 2 and 6), but people of any age can be affected by this sleep disorder. Typical symptoms include excessive sweating, shaking and obvious fear.

TEXT 15. TOP REASONS TO GET A GOOD NIGHT'S SLEEP

How Sleep Improves Memory, Reduces Stress and Enhances Decision-Making

When was the last time you found yourself drifting off in the middle of a long class lecture or meeting? According to the National Sleep Foundation's 2008 "Sleep in America" poll, 29% of participants reported becoming very sleepy or even falling asleep at work in the previous month alone.

Recent research has linked lack of sleep to a wide range of ailments, including memory problems and obesity. Learn more about some of the top reasons why you should get a good night's sleep.

Sleep May Help You Learn More Effectively

Researchers have long believed that sleep plays an important role in memory, but recent evidence suggests that getting a good night's sleep can improve learning. In one study, researchers found that depriving students of sleep after learning a new skill significantly decreased memory of that skill up to three days later. Known as the memory consolidation theory of sleep, this notion proposes that sleep serves to process and retain information learned earlier while awake. While there is research both for and against the theory, many studies have shown that sleep can play an important role in certain types of memory.

Research Suggests Sleep Deprivation May Contribute to Obesity

In addition to affecting memory and learning, lack of sleep has been linked to body weight. In one 2005 study published in the Archives of Internal Medicine, overweight participants were found to sleep less than participants of a normal weight. It has been reported that poor sleep at age 30 months can predict obesity at age seven. While researchers do not yet understand exactly how sleep disruption impacts appetite and metabolism, getting a good night's sleep certainly can't hurt your weight loss or weight maintenance efforts.

Sleep is Important for Managing Stress

According to many experts, most people need between seven and eight hours of sleep each night. What happens when you don't get enough sleep? Symptoms such as moodiness, anxiety, aggression and increased stress levels can result. It has been suggested that taking "power naps" to combat drowsiness, reduce stress and increase productivity. While sleeping more certainly won't eliminate all stress, it can help increase your readiness to cope with the stress of day-to-day life.

Sleep Can Help You Make Better Decisions

Have you ever found yourself struggling to make relatively simple decisions after a night of poor sleep? In addition to reducing such things as response time and accuracy, lack of sleep has also been linked to difficulty making good decisions. In one study published in the journal Sleep, researchers found that sleepiness has a serious impact on the ability to make effective decisions (Roehrs, 2004). Another study suggested that sleep impairs decision-making when gambling by increasing expectations of potential gains while minimizing losses. If you're facing a challenging decision, make sure that you are well rested so that you will be at your best.

TEXT 16. WHAT IS HYPNOSIS?

Hypnosis Applications, Effects and Myths

What exactly is hypnosis? While definitions can vary, the American Psychological Association describes hypnosis as a cooperative interaction in which the participant responds to the suggestions of the hypnotist. While hypnosis has become well-known thanks to popular acts where people are prompted to performs unusual or ridiculous actions, the technique has also been clinically proven to provide medical and therapeutic benefits, most notably in the reduction of pain and anxiety. It has even been suggested that hypnosis can reduce the symptoms of dementia.

How Does Hypnosis Work?

When you hear the word hypnotist, what comes to mind? If you’re like many people, the word may conjure up images of a sinister stage-villain who brings about a hypnotic state by swinging a pocket watch back and forth.

In reality, real hypnosis bears little resemblance to these stereotyped images. According to John Kihlstrom, "The hypnotist does not hypnotize the individual. Rather, the hypnotist serves as a sort of coach or tutor whose job is to help the person become hypnotized". While hypnosis is often described as a sleep-like

trance state, it is better expressed as a state characterized by focused attention, heightened suggestibility and vivid fantasies.

What Effects Does Hypnosis Have?

The experience of hypnosis can vary dramatically from one person to another. Some hypnotized individuals report feeling a sense of detachment or extreme relaxation during the hypnotic state, while others even feel that their actions seem to occur outside of their conscious volition. Other individuals may remain fully aware and able to carry out conversations while under hypnosis.

Experiments by researcher Ernest Hilgard demonstrated how hypnosis can be used to dramatically alter perceptions. After instructing a hypnotized individual to not feel pain in his or her arm, the participant's arm was then placed in ice water. While non-hypnotized individuals had to remove their arm from the water after a few seconds due to the pain, the hypnotized individuals were able to leave their arms in the ice water for several minutes without experiencing pain.

What Can Hypnosis Be Used For?

The following are just a few of the applications for hypnosis that have been demonstrated with research:

- The treatment of chronic pain conditions such as rheumatoid arthritis.
- The treatment and reduction of pain during childbirth.
- The reduction of the symptoms of dementia.
- Hypnotherapy may be helpful for certain symptoms of ADHD.
- The reduction of nausea and vomiting in cancer patients undergoing chemotherapy.
- Control of pain during dental procedures.
- Elimination or reduction of skin conditions including warts and psoriasis.
- Alleviation of symptoms association with Irritable Bowel Syndrome.

Can *You* Be Hypnotized?

While many people think that they cannot be hypnotized, research has shown that a large number of people are more hypnotizable than they believe.

Fifteen percent of people are very responsive to hypnosis.

Children tend to be more susceptible to hypnosis.

Approximately ten percent of adults are considered difficult or impossible to hypnotize.

People who can become easily absorbed in fantasies are much more responsive to hypnosis.

If you are interested in being hypnotized, it is important to remember to approach the experience with an open mind. Research has suggested that individuals who view hypnosis in a positive light tend to respond better.

TEXT 17. HYPNOSIS MYTHS

Myth 1: When you wake up from hypnosis, you won't remember anything that happened when you were hypnotized. While amnesia may occur in very rare cases, people generally remember everything that occurred while they were hypnotized. However, hypnosis can have a significant effect on memory. Posthypnotic amnesia can lead an individual to forget certain things that occurred before or during hypnosis. However, this effect is generally limited and temporary.

Myth 2: Hypnosis can help people remember the exact details of a crime they witnessed. While hypnosis can be used to enhance memory, the effects have been dramatically exaggerated in popular media. Research has found that hypnosis does not lead to significant memory enhancement or accuracy, and hypnosis can actually lead to false or distorted memories.

Myth 3: You can be hypnotized against your will. Despite stories about people being hypnotized without their consent, hypnosis requires voluntary participation on the part of the patient.

Myth 4: The hypnotist has complete control of your actions while you're under hypnosis. While people often feel that their actions under hypnosis seem to occur without the influence of their will, a hypnotist cannot make you perform actions that are against your values or morals.

Myth 5: Hypnosis can make you super-strong, fast or athletically talented. While hypnosis can be used to enhance performance, it cannot make people stronger or more athletic than their existing physical capabilities.

Self-Hypnosis

Definition: As the name implies, self-hypnosis is the act of hypnotizing oneself. Typically used to help a person achieve a state of relaxation that makes them receptive to suggestion, self-hypnosis can assist ex-smokers with stress reduction and fostering a positive state of mind about smoking cessation.

TEXT 18. What Are the Gestalt Laws of Perceptual Organization?

Gestalt psychology was founded by German thinkers Max Wertheimer, Wolfgang Kohler and Kurt Koffka and focused on how people interpret the world. The Gestalt perspective formed partially as a response to the structuralism of Wilhelm Wundt, who focused on breaking down mental events and experiences to the smallest elements. Max Wertheimer noted that rapid sequences of perceptual events, such as rows of flashing lights, create the illusion of motion even when there is none. This is known as the phi phenomenon. Motion pictures are based upon this principle, with a series of still images appearing in rapid succession to form a seamless visual experience.

According to Gestalt psychology, the whole is different than the sum of its parts. Based upon this belief, Gestalt psychologists developed a set of principles to explain perceptual organization, or how smaller objects are grouped to form larger ones. These principles are often referred to as the "laws of perceptual organization."

However, it is important to note that while Gestalt psychologists call these phenomena "laws," a more accurate term would be "principles of perceptual organization." These principles are much like heuristics, which are mental shortcuts for solving problems.

1. The law of similarity suggests that things similar things tend to appear grouped together. Grouping can occur in both visual and auditory stimuli.

2. The law of Pragnanz is sometimes referred to as the law of good figure or the law of simplicity. This law holds that objects in the environment are seen in a way that makes them appear as simple as possible.

3. According to the law of proximity, things that are near each other seem to be grouped together.

4. The law of continuity holds that points that are connected by straight or curving lines are seen in a way that follows the smoothest path. Rather than seeing separate lines and angles, lines are seen as belonging together.

5. According to the law of closure, things are grouped together if they seem to complete some entity. Our brains often ignore contradictory information and fill in gaps in information.

TEXT 19. OPTICAL ILLUSIONS.

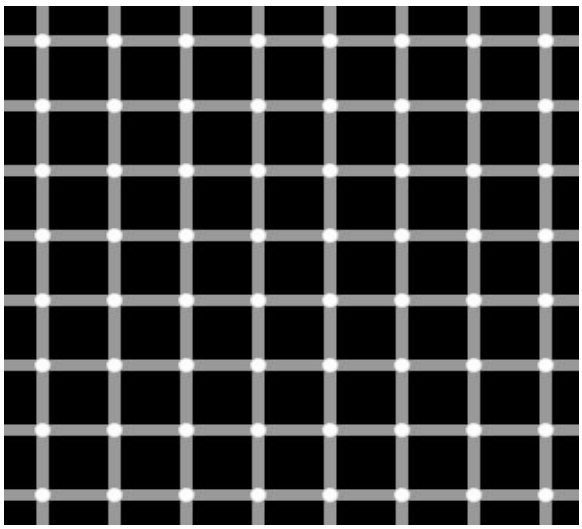
How They Work and What They Reveal About the Brain

What is an optical illusion? Optical illusions, more appropriately known as visual illusions, involves visual deception. Due to the arrangement of images, effect of colors, impact of light source or other variable, a wide range of misleading visual effects can be seen.

If you've ever struggled to see the hidden image in a single-image stereogram, you may have discovered that not everyone experience visual illusions in the same way. For some illusions, some people simply are not able to see the effect.

While optical illusions can be fun and interesting, they also reveal a great deal about the working of the brain. Learn more about some of the most famous optical illusion and discover exactly how and why these visual illusions occur.

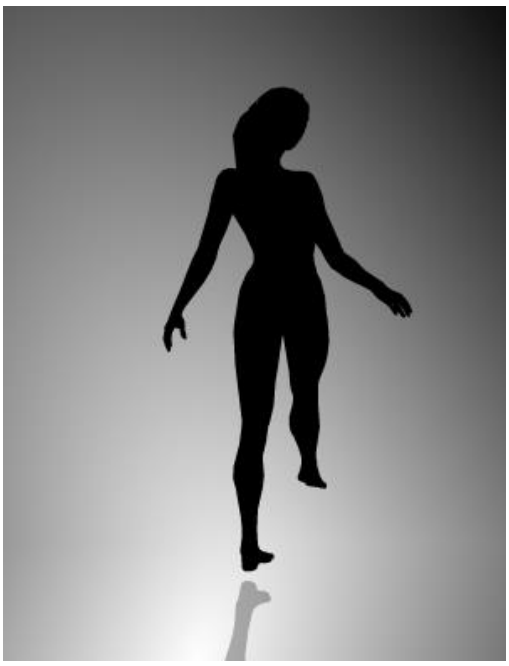
1. Hermann Grid Illusion. In the Hermann Grid Illusion, the white dots at the center of each square seem to shift from white to grey.



The Hermann grid was first discovered by a physiologist named Ludimar Hermann in 1870. When the viewer looks at the grid, the white dots and the center of each 'corridor' seem to shift between white and gray. When the viewer focused his or her attention on a specific dot, it is obvious that it is white. But as soon as attention is shifted away, the dot shifts to a gray color. So why do people see gray where there should be white? Why do we see something so different from reality?

Researchers have traditionally used what is known as lateral inhibition to explain why people see these gray areas. This phenomena demonstrates a very important principle of perception: we don't always see what's really there. Our perceptions depend upon how our visual system responds to environmental stimuli and how our brain then interprets this information. However, there is evidence suggesting that this explanation is likely inaccurate. The fact that the illusion is not dependent upon size, can be seen with contrast reversal and can be negated by slightly distorting the lines have been cited as reasons why the classic theory is wrong.

2. The Spinning Dancer Illusion. The spinning dancer illusion shows an ambiguous silhouette that appears to abruptly change direction.

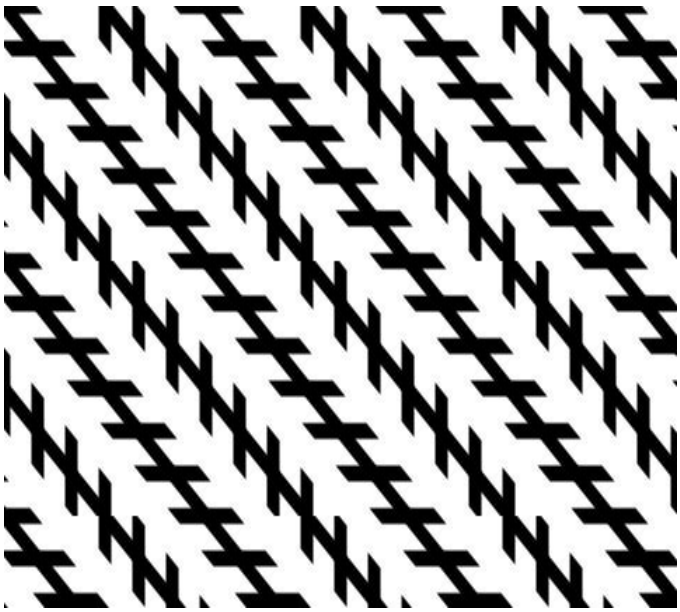


What Do You See?

In this image, you see the silhouette of a woman spinning. Which direction is she turning? You may be surprised to learn that it is possible to see her spinning both clockwise and counterclockwise. How? While it may be very difficult, you can probably get her to switch directions spontaneously. Try looking at the figure and then blink; she may appear to change directions immediately after you blink. Another strategy is to focus on a specific part of the figure.

After it was initially created by Nobuyuki Kayahara, the illusion was mistakenly referred to as a scientific personality test of right brain/left brain dominance by numerous websites and blogs. In reality, the spinning dancer illusion is related to bistable perception 1. in which an ambiguous 2-dimensional figure can be seen in from two different perspectives.2 Because there is no third dimension, our brains try to construct space around the figure.

3. Zöllner illusion. In the Zöllner illusion, straight lines appear to move even though they are static.



The Zöllner illusion is another commonly demonstrated optical illusion. First discovered in 1860 by a German astrophysicist named Johann Karl Friedrich Zöllner, this illusion presents a series of oblique lines crossed with overlapping short lines. The oblique lines look as if they are crooked and will diverge. In reality, all of the oblique lines are parallel.

Much like the Muller-Lyer and Herring illusions, this optical illusion demonstrates how the background of an image can distort the appearance of straight lines. Several different explanations for the Zöllner illusion have been suggested. First, the angle of the short lines compared to the longer lines creates an impression of depth. One of the lines appears to be nearer to us; the other farther away. Another possible explanation is that the brain attempts to increase the angles between the long and short lines. This results in a distortion as the brain tries to bend the lines away and towards each other.

Interestingly, if the color of the lines is switched to green and the background to red, the effect completely disappears as long as the two colors are of equal brightness.

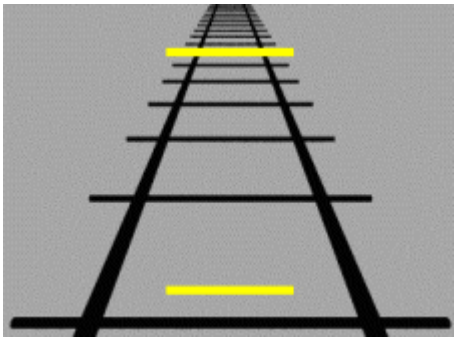
1. The Ames Room Illusion. In the Ames room illusion, two people standing in a room appear to be of dramatically different sizes, even though they are the same size.

In the room, the individual on the left appears to be very tall, while the person on the right looks very small. In reality, both people are of approximately the same height and size.

The effect works by utilizing a distorted room to create the illusion of a dramatic disparity in size. While the room appears square-shaped from the viewers perspective, it is actually has a trapezoidal shape. The woman on the right hand side of the image above is actually standing in a corner that is much further away than the woman on the left.

The illusion leads the viewer to believe that the two individuals are standing in the same depth of field, when in reality the subject is standing much closer. The woman on the left in the image above appears at a much greater visual angle, but the fact that she appears to be at the same depth of field as the figure on the right makes the closer individual look much larger.

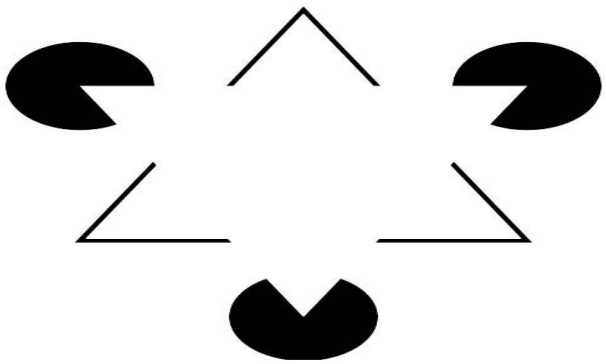
2. The Ponzo Illusion. In the Ponzo illusion, two identically-sized lines appear to be different sizes when placed over parallel lines that seem to converge as they recede into the distance.



In the image above illustrating the Ponzo illusion, the two yellow lines are the exact same size. Because they are placed over parallel lines that seem to converge in the distance, the top yellow line actually appears to be longer than the bottom one.

The Ponzo illusion was first demonstrated in 1913 by an Italian psychologist named Mario Ponzo. The reason the top horizontal line looks longer is because we interpret the scene using linear perspective. Since the vertical parallel lines seem to grow closer as they move further away, we interpret the top line as being further off in the distance. An object in the distance would need to be longer in order for it to appear the same size as a near object, so the top "far" line is seen as being longer than the bottom "near" line, even though they are the same size.

3. The Kanizsa Triangle Illusion. The Kanizsa Triangle is an optical illusion in which a triangle is perceived even though it is not actually there.



The Kanizsa Triangle illusion was first described in 1955 by an Italian psychologist named Gaetano Kanizsa. In the illusion, a white equilateral triangle can be seen in the image even though there is not actually a triangle there. The effect is caused by illusory or subject contours.

Gestalt psychologists use this illusion to describe the law of closure, one of the gestalt laws of perceptual organization. According to this principle, objects that are grouped together tend to be seen as being part of a whole. We tend to ignore gaps and perceive the contour lines in order to make the image appear as a cohesive whole.

TEXT 20. TOP 10 MEMORY IMPROVEMENT TIPS

Do you find yourself forgetting where you left your keys or blanking out information on important tests? Fortunately, there are things that you can do to help improve your memory. Before your next big exam, be sure to check out some of these tried and tested techniques for improving memory. These strategies have been established within cognitive psychology literature to improve memory, enhance recall and increase retention of information.

1. Focus your attention on the materials you are studying. Attention is one of the major components of memory. In order for information to move from short-term memory into long-term memory, you need to actively attend to this information. Try to study in a place free of distractions such as television, music and other diversions.

2. Avoid cramming by establishing regular study sessions. Studying materials over a number of session's gives you the time you need to adequately process the information. Research has shown that students who study regularly remember the material far better than those who do all of their studying in one marathon session.

3. Structure and organize the information you are studying. Researchers have found that information is organized in memory in related clusters. You can take advantage of this by structuring and organizing the materials you are studying. Try grouping similar concepts and terms together, or make an outline of your notes and textbook readings to help group related concepts.

4. Utilize mnemonic devices to remember information. Mnemonic devices are a technique often used by students to aid in recall. A mnemonic is simply a way to remember information. For example, you might associate a term you need to remember with a common item that you are very familiar with. The best mnemonics are those that utilize positive imagery, humor or novelty. You might come up with a rhyme, song or joke to help remember a specific segment of information.

5. Elaborate and rehearse the information you are studying. In order to recall information, you need to encode what you are studying into long-term memory. One of the most effective encoding techniques is known as elaborative rehearsal. An example of this technique would be to read the definition of a key term, study the definition of that term and then read a more detailed description of what that term means. After repeating this process a few times, you'll probably notice that recalling the information is much easier.

6. Relate new information to things you already know. When you are studying unfamiliar material, take the time to think about how this information relates to things that you already know. By establishing relationships between new ideas and previously existing memories, you can dramatically increase the likelihood of recalling the recently learned information.

7. Visualize concepts to improve memory and recall. Many people benefit greatly from visualizing the information they study. Pay attention to the photographs, charts and other graphics in your textbooks. If you do not have visual cues to help, try creating your own. Draw charts or figures in the margins of your notes or use highlighters or pens in different colors to group related ideas in your written study materials.

8. Teach new concepts to another person. Research suggests that reading materials out loud significantly improves memory of the material. Educators and psychologists have also discovered that having students actually *teach* new concepts to others enhances understanding and recall. You can use this approach in your own studies by teaching new concepts and information to a friend or study partner.

9. Pay extra attention to difficult information. Have you ever noticed how it's sometimes easier to remember information at the beginning or end of a chapter? Researchers have found that the order of information can play a role in recall, which is known as the serial position effect. While recalling middle information can be difficult, you can overcome this problem by spending extra time rehearsing this information. Another strategy is to try restructuring what you have learned so

it will be easier to remember. When you come across an especially difficult concept, devote some extra time to memorizing the information.

10. Vary your study routine. Another great way to increase your recall is to occasionally change your study routine. If you are accustomed to studying in one specific location, try moving to a different spot during your next study session. If you study in the evening, try spending a few minutes each morning reviewing the information you studied the previous night. By adding an element of novelty to your study sessions, you can increase the effectiveness of your efforts and significantly improve your long-term recall.

TEXT 21. 10 FACTS ABOUT MEMORY

Our memory helps make us who we are. From fondly recollecting childhood events to remembering where we left our keys, memory plays a vital role in every aspect of our lives. It provides us with a sense of self and makes up our continual experience of life. It's easy to think of memory as a mental filing cabinet, storing away bits of information until we need them. In reality, it is a remarkably complex process that involves numerous parts of the brain. Memories can be vivid and long-lasting, but they are also susceptible to inaccuracies and forgetting.

1. The Hippocampus Plays an Important Role In Memory. The hippocampus is a horse-shoe shaped area of the brain that plays an important role in consolidating information from short-term memory into long-term memory. It is part of the limbic system, a system associated with emotions and long-term memories. The hippocampus is involved in such complex processes as forming, organizing, and storing memories. Because both sides of the brain are symmetrical, the hippocampus can be found in both hemispheres. If one side of the hippocampus is damaged or destroyed, memory function will remain nearly normal as long as the other side is undamaged. Damage to both sides of the hippocampus can impede the ability to form new memories, known as anterograde amnesia. Functioning of the hippocampus can also decline with age. By the time people reach their 80s,

they may have lost as much as 20 percent of the nerve connections in the hippocampus. While not all older adults exhibit this neuron loss, those who do show decreased performance on memory tests.

2. Most Short-Term Memories Are Quickly Forgotten. The total capacity of short-term memory is fairly limited. Experts believe that you can hold approximately seven items in short-term memory for about 20 to 30 seconds. This capacity can be stretched somewhat by using memory strategies such as chunking, which involves grouping related information into smaller "chunks." In a famous paper published in 1956, psychologist George Miller suggested that the capacity of short-term memory for storing a list of items was somewhere between five and nine. Today, many memory experts believe that the true capacity of short-term memory is probably closer to the number four. See this in action for yourself by trying out this short-term memory experiment. Spend two minutes memorizing a random list of words, then get a blank piece of paper and try to write down as many of the words that you can remember.

3. Being Tested On Information Actually Helps You Remember It Better. While it may seem like studying and rehearsing information is the best way to ensure that you will remember it, researchers have found that being tested on information is actually one of the best ways to improve recall. One experiment found that students who studied and were then tested had better long-term recall of the materials, even on information that was not covered by the tests. Students who had extra time to study but were not tested had significantly lower recall of the materials.

4. You Can Learn to Improve Your Memory. Do you ever feel like you are constantly forgetting things or misplacing objects that you use every day? Have you ever found yourself walking into a room only to realize that you can't remember why you went in there in the first place? While it might seem like you are doomed to simply tolerate these daily annoyances, researchers have found that you can learn how to improve your memory.

A 2005 cover story in the *Monitor on Psychology* summarized research revealing a number of useful strategies to deal with mild memory loss. These techniques include:

- *Utilizing technology to keep track of information.* Tools such as hand-held mobile devices and online reminder calendars can help people keep track of appointments and other important dates. Using a reminder app on your phone can be a handy way to stay on top of important dates and events.
- *Taking a "mental picture" can help.* Systematically trying to make a mental note of things you often forget (such as where you left your car keys) can help you remember things better. The next time you set your keys down somewhere, take a moment to mentally note where you left them as well as the other objects that were nearby. If you think to yourself "I left my keys by my wallet on the desk," you'll probably find it easier to recall the information later.
- *Use memorization techniques.* Rehearsing information, employing mnemonics, and other memorization strategies are perhaps the best ways to overcome minor memory problems. By learning how to use these strategies effectively, you can sidestep the faulty areas of your memory and train your brain to function in new ways.

5. There Are Four Major Reasons Why You Forget Things. In order to combat forgetfulness, it is important to understand some of the major reasons *why* we forget things. Elizabeth Loftus, one of the world's most renowned experts on human memory, has identified four major reasons why forgetting occurs. One of the most common explanations is a simple failure to retrieve the information from memory. This often occurs when memories are rarely accessed, causing them to decay over time.

Another common cause of forgetting is interference, which occurs when some memories compete with other memories. For example, imagine that a woman just started a new school year as an elementary school teacher. She spends some time learning the names of each of her students, but over the course of the year she finds herself constantly calling one particular girl by the wrong name. Why?

Because the girl's older sister was in the same class the year before, and the two look remarkably similar. It is the memory of the older sister that makes it so difficult to recall the younger student's name.

Other causes of forgetting include failing to store the information in memory in the first place, or even intentionally trying to forget things associated with a troubling or traumatic event.

6. Depictions of Amnesia in Movies Are Usually Inaccurate. Amnesia is a common plot device in the movies, but these depictions are often wildly inaccurate. For example, how often have you seen a fictional character lose their memory due to a bump on the head only to have their memories magically restored after suffering a second knock to the skull?

There are two different types of amnesia:

✓ **Anterograde amnesia:** Involves the loss of the ability to form new memories.

✓ **Retrograde amnesia:** Involves losing the ability to recollect past memories, although the ability to create new memories may remain intact.

While most movie depictions of amnesia involve retrograde amnesia, anterograde amnesia is actually far more common. The most famous case of anterograde amnesia was a patient known in the literature as H.M. In 1953, he had brain surgery to help stop the seizures caused by his severe epilepsy. The surgery involved the removal of both hippocampi, the regions of the brain strongly associated with memory. As a result, H.M. was no longer able to form any new long-term memories. Popular movies and television programs tend to depict such memory loss as fairly common, but true cases of complete amnesia about one's past and identity are actually quite rare. Some of the most common causes of amnesia include:

✓ **Trauma:** A physical trauma, such as a car accident, can cause the victim to lose specific memories of the event itself. Emotional trauma, such as being a victim of childhood sexual abuse, can cause the individual to lose memories of specific situations.

✓ **Drugs:** Certain medications can be used to cause temporary amnesia, particularly during medical procedures. Once the drugs wear off, the individual's memory returns to normal functioning.

7. Scent Can Be a Powerful Memory Trigger. Have you ever noticed that a particular scent can bring forth a rush of vivid memories? The smell of cookies baking might remind you of spending time at your grandmother's house when you were a small child. The scent of a particular perfume might remind you of a romantic partner with whom your relationship ended on a sour note. Why does smell seem to act as such a powerful memory trigger?

First, the olfactory nerve is located very close to the amygdala, the area of the brain that is connected to the experience of emotion as well as emotional memory. In addition, the olfactory nerve is very close to the hippocampus, which is associated with memory as you learned earlier in this article.

The actual ability to smell is highly linked to memory. Research has shown that when areas of the brain connected to memory are damaged, the ability to identify smells is actually impaired. In order to identify a scent, you must remember when you have smelled it before and then connect it to visual information that occurred at the same time. According to some research, studying information in the presence of an odor actually increases the vividness and intensity of that remembered information when you smell that odor again.

8. New Brain Connections Are Created Every Time You Form a Memory. Researchers have long believed that changes in brain neurons are associated with the formation of memories. Today, most experts believe that memory creation is associated with the strengthening of existing connections or the growth of new connections between neurons. The connections between nerve cells are known as synapses, and they allow information carried in the form of nerve impulses to travel from one neuron to the next. In the human brain, there are trillions of synapses forming a complex and flexible network that allows us to feel, behave, and think. It is the changes in the synaptic connections in areas of the brain such as

the cerebral cortex and hippocampus that is associated with the learning and retention of new information.

Clearly, maintaining a healthy brain and synapses is critical. Deterioration of synapses due to diseases or neurotoxins is associated with cognitive problems, memory loss, changes in mood, and other alterations in brain function.

So what can you do to strengthen your synapses?

✓ **Avoid stress:** Research has found that extended exposure to stress can actually interfere with neurotransmitter function. Other studies have found that stress shrinks neurons in the prefrontal cortex and hippocampus.

✓ **Avoid drugs, alcohol, and other neurotoxins:** Drug use and excessive alcohol consumption have been linked to synaptic deterioration. Exposure to dangerous chemicals such as heavy metals and pesticides can also cause synaptic loss.

✓ **Get Plenty of Exercise:** Regular physical activity helps improve oxygenation of the brain, which is vital for synaptic formation and growth.

✓ **Stimulate your brain:** You've probably heard the old adage "Use it or lose it." Well, it turns out there's a lot of truth to that when it comes to memory. Researchers have found that elderly adults who engage in mentally stimulating activities are less likely to develop dementia and people with higher educational statuses tend to have more synaptic connections in the brain.

9. A Good Night's Sleep May Improve Your Memory. You have probably heard about many of the reasons to get a good night's sleep. Since the 1960s, researchers have noted the important connection between sleep and memory. In one classic experiment conducted in 1994, researchers found that depriving participants of sleep impaired their ability to improve performance on a line identification task.

In addition to aiding in memory, sleep also plays and essential role in learning new information. In one study, researchers found that depriving students of sleep after learning a new skill significantly decreased memory of that skill up to three days later.

Researchers have found, however, that sleep's influence on procedural memory is much stronger than it is for declarative memory. Procedural memories are those that involve motor and perceptual skills, while declarative memories are those that involve the memorization of facts.

10. Memory Failure in Old-Age Might Not Be Inevitable. While Alzheimer's disease and other age-related memory problems affect many older adults, the loss of memory during old-age might not inevitable. Certain abilities do tend to decline with age, but researchers have found that individuals in their 70s often perform just as well on many cognitive tests as do those in their 20s. Some types of memory even increase with age.

While researchers are still working to understand why exactly some elderly adults manage to maintain an excellent memory while other struggle, a few factors have been implicated so far. First, many experts believe that there is a genetic component to memory retention during old age. Secondly, lifestyle choices are also believed to play an important role. A genetic vulnerability increases the likelihood that experience will have an effect.

So what are some steps you can take to stave of the negative effects of aging? According to one decade-long study, having a strong sense of self-efficacy has been associated with maintaining good memory abilities during old age. Self-efficacy refers to the sense of control that people have over their own lives and destiny. This strong sense of self-efficacy has also been linked to lowered stress levels. As mentioned previously, high levels of chronic stress have been connected to deterioration in the memory centers of the brain.

While there is no simple "quick fix" for ensuring that your memory stays intact as you age, researchers believe that avoiding stress, leading an active lifestyle, and remaining mentally engaged are important ways to decrease your risk of memory loss.

TEXT 22. **STRATEGIES FOR STUDYING**

The SQ3R method can improve your ability to learn information from textbooks. Francis Robinson of Ohio State University suggested a method for studying textbooks known as the SQ3R method. These initials stand for the five steps.

S: *Survey.* Look ahead at the content of the text before you begin to read.

Q: *Question.* Ask yourself questions about the material you are reading before and as you read.

R: *Read.* Read through the material in the normal way.

R: *Recite.* Recite the new information that you are learning out loud or silently.

R: *Review.* Go over the material that you have learned several times before you are tested on it.

Several other study strategies may help you make even more efficient use of your study time.

1. *Be Sure That You Are Actually Learning.* The most common reason students "forget" information when taking tests is that they did not actually learn it in the first place. Since studying is not much fun, even when you are efficient at it, it's far too easy to *act* as if you are studying when in fact you are really listening to the radio, thinking about your sweetheart, or clipping your nails. If you are good at *acting* as if you are studying you can easily fool your roommate, your best friend, or even yourself. Fooling yourself is the most dangerous possibility; do not fool yourself into thinking that you are studying when you are not really exerting the effort to become absorbed in the material. When you study, do really study.

2. *Find a Good Place to Study, and Only Study There.* One way to help you really study during your study periods is to find a good place to study, *and only study in that place.* The goal is to associate that place *only* with effective studying. Begin by choosing a spot that *is free* from distractions. Some places in libraries are ideal for studying, but other places in libraries are great for talking and making new friends. Avoid the latter when you are studying, but feel free to visit

these places when you are taking breaks. After you find a good place to study, never do anything there except study. If a friend comes over for conversation, get up and move to another area to talk. Return only when you are ready to study. Similarly, if you are in your study place and find that your mind is wandering, *leave* it until you are ready to study again. If you do this consistently—if you *only study* when you are in your study place—this spot will "feel" like a place to study, and you will be more apt to study efficiently while you are there. This doesn't mean that you cannot also study in other places—like on the bus when you have a 20-minute ride—but, having a good place to study that becomes associated only with studying will help you study efficiently when you are there.

3. *Space Out Your Study Time.* As long ago as 1885, Hermann Ebbinghaus found that studying a list of new information once a day for several days resulted in better recall of that information than studying the list several times in one day. Since his time, a great deal of research has shown that *spaced practice* often results in better learning and memory than *massed practice*. This is especially true in learning motor skills (such as learning to play a musical instrument or learning large amounts of unfamiliar verbal material such as studying for a psychology test). This is why cramming (massing all your study time into one long session) is terribly inefficient. You can get better grades by spacing the same amount of study time over a longer period.

TEXT 23. **USE MNEMONIC DEVICES**

The suggestions given thus far concern how to study. The following suggestions are about how to *memorize* information when you are studying.

Mnemonic devices are methods for storing memories so that they will be easier to recall. In each mnemonic device, an additional indexing cue is memorized along with the material to be learned. *More is less* with mnemonics; memorizing something more will improve retrieval and result in less forgetting.

1. *Method of Loci*. *Loci* is the Latin word for "places". In this method, the items in a list are mentally placed in a series of logically connected places. For

example, if you are trying to remember a grocery list, you might think of a bag of sugar hanging on your garage door, a gallon of milk sitting in the front seat of your car, a carton of eggs perched on your steering wheel, and a box of donuts sitting in front of the grocery store door.

2. *Acronym Method.* In this simple method, the first letters of each word in a list are combined to form an acronym. For example, the four stages of alcoholism, which are Prealcoholic, Prodromal, Crucial, and Chronic, can be memorized using the acronym PPCC. Acronyms are even more useful if they form a real word. For most people, the word *ape* means an animal in a zoo, but the acronym APE helps to remember the names of the three subscales of the psychological test called the Semantic Differential Scale: Activity, Potency, and Evaluation.

A system closely related to acronyms takes the first letter of each word in an ordered series but uses them in a new sentence. As with acronyms, memory of a phrase or sentence is likely to spark recall of an entire list.

3. *Keyword Method.* It is easier to memorize information that you understand than information that you do not. Some of the things that you need to memorize for college courses will be meaningful to you if you take the time to think about it before you try to memorize it, but sometimes you will have to give additional meaning to the things you are memorizing. Raugh and Atkinson (1975) demonstrated the value of teaching students to do this in memorizing Spanish vocabulary words, using what they called the *keyword* method. They asked one group of students to memorize English translations in the standard way of associating the English word with the unknown Spanish word. Another group was taught to increase the meaningfulness of the association between the English and Spanish word pairs. They were told to think of an English word that sounded like the Spanish word and form a mental image of the English sound-alike word and the actual English translation.

Students who learned the Spanish vocabulary in this more meaningful fashion were able to recall an average of 88 percent of the words, whereas the students who used rote memorization were able to recall an average of only 28

percent when tested later. By actively enhancing the meaningfulness of what was learned using the keyword method, the students were able to greatly improve its storage in memory.

Try some of these prescriptions for better learning and memory; they could make a big difference.

TEXT 24. **5 TIPS TO BETTER UNDERSTANDING FACIAL EXPRESSIONS**

The ability to read facial expressions is an important part of understanding nonverbal communication. If you only listen to what a person says, and ignore what that person's face is telling you, then you really only have half the story. Often, words do not match actual emotions, and the face belies what a person is really feeling.

If you suffer with social anxiety disorder (SAD) you might have a hard time paying attention to facial expressions. You might have trouble with eye contact or read too much into any negative expression you see on the other person's face. Although it is important to pay attention to facial expressions, always remember that though you might know the emotion, you don't know the cause. If someone seems bored, upset or disinterested it could be for a number of reasons other than the current conversation.

The value in understanding facial expressions is to gather information about how the other person is feeling and guide your interaction accordingly. If someone appears disinterested she might just be tired, and it might be time to end the conversation.

Below are five tips to help you better read the facial expressions of others.

1. **Universal Emotions.** Research by Dr. Paul Eckman tells us that there are a handful of universal facial expressions that cross cultural divides; even blind people make the same faces to express the same emotions. These are: surprise, fear, disgust, contempt, anger, sadness and happiness. Practice making the facial

expressions that go along with these emotions and you will become better at recognizing them in other people.

2. **Microexpressions.** Not all facial expressions stick around for a long time. Those that pass quickly are called microexpressions and are almost indiscernible to the casual observer. However, you might be picking up on these microexpressions if you get a "feeling" about someone.

3. **Eyebrows.** Eyebrows tell a lot about what a person is feeling. They can be raised and arched (surprise), lowered and knit together (anger), or the inner corners drawn up (sadness). Watch someone's eyebrows to get a handle on how that person is feeling.

4. **Eyes.** The only thing more telling than the eyebrows are the eyes themselves. They might be wide open (surprise), intensely staring (anger), or have crow's feet crinkles (happy). In addition, dilated pupils can indicate fear or romantic interest while rapid blinking might signal dishonesty or stress.

5. **Mouth.** The final piece of the facial expression puzzle has to do with the mouth. Look for a dropped jaw (surprise), open mouth (fear), one side of the mouth raised (hate), corners raised (happiness) or corners drawn down (sadness). Other signals to look for are lip biting (anxiety), pursed lips (distaste), or covering the mouth (hiding something).

These are just a few tips to get you thinking about the facial expressions you see during conversation and what they mean. If you find that you are having a hard time reading other people's emotions through their expressions, you might need more practice, or you might simply have trouble decoding what others are feeling.

If your inability to read facial expressions causes you distress, consider seeking help from a mental health professional to identify the issue and appropriate method of remediation.

TEXT 25**. WHAT IS POSITIVE THINKING?**

"Most folks are about as happy as they make up their minds to be." Abraham Lincoln

Do you tend to see the glass as half empty or half full? You have probably heard that question plenty of times. Your answer relates directly to the concept of positive thinking and whether you have a positive or negative outlook on life. Positive thinking plays an important role in positive psychology, a subfield devoted to the study of what makes people happy and fulfilled.

Research has found that positive thinking can aid in stress management and even plays an important role in your overall health and well-being.

So what exactly is positive thinking? You might be tempted to assume that it implies seeing the world through rose-colored lenses by ignoring or glossing over the negative aspects of life. However, positive thinking actually means approaching life's challenges with a positive outlook. It does not necessarily mean avoiding or ignoring the bad things; instead, it involves making the most of potentially bad situations, trying to see the best in other people, and viewing yourself and your abilities in a positive light.

Some researchers often frame positive thinking in terms of explanatory style. Your explanatory style is how you explain why events happened. People with an optimistic explanatory style tend to give themselves credit when good things happen, but typically blame outside forces for bad outcomes. They also tend to see negative events as temporary and atypical.

On the other hand, individuals with a pessimistic explanatory style often blame themselves when bad things happen, but fail to give themselves adequate credit for successful outcomes. They also have a tendency to view negative events as expected and lasting. As you can imagine, blaming yourself for events outside

of your control or viewing these unfortunate events as a persistent part of your life can have a detrimental impact on your state of mind.

Positive thinkers are more apt to use an optimistic explanatory style, but the way in which people attribute events can also vary depending upon the exact situation. For example, a person who is generally a positive thinker might use a more pessimistic explanatory style in particularly challenging situations, such as at work or at school.

The Health Benefits of Positive Thinking

In recent years, the so-called "power of positive thinking" has gained a great deal of attention thanks to self-help books such as The Secret. While these pop-psychology books often tout positive thinking as a sort of psychological panacea, empirical research has found that there are many very real health benefits linked to positive thinking and optimistic attitudes.

According to the Mayo Clinic, positive thinking is linked to a wide range of health benefits including:

- ✓ Longer life span
- ✓ Less stress
- ✓ Lower rates of depression
- ✓ Increased resistance to the common cold
- ✓ Better stress management and coping skills
- ✓ Lower risk of cardiovascular disease-related death
- ✓ Increased physical well-being
- ✓ Better psychological health

Clearly, there are many benefits of positive thinking, but why exactly does positive thinking have such a strong impact on physical and mental health. One theory is that people who think positively tend to be less affected by stress. Another possibility is that people who think positively tend to live healthier lives in general; they may exercise more, follow a more nutritious diet and avoid unhealthy behaviors.

TEXT 26. **STRESS RELIEVERS FOR ALL TYPES OF PEOPLE**

We all experience stress from time to time. When stress gets to be too much, it can take a toll on our health and wellbeing. That's why effective stress relievers are essential in restoring inner peace and physical health. Here is a growing list of stress relievers that can help you feel less affected by stress in your life.

1. **Guided Imagery.** Practicing guided imagery is a fun and simple way to take a break from stress, clarify what you want, and build optimism. It's a relatively quick pathway to mental peace.

2. **Self-Hypnosis.** Self-hypnosis provides a simple and relaxing route to changing habits, relaxing your body, altering your thought patterns, and more. Because all of these can be stress relievers, self-hypnosis is well worth the effort.

3. **Autogenics.** Autogenics allows you to change your physiology with your mind, and reverse your stress response easily.

4. **Journaling.** Journaling can be used in several different ways, all of which can relieve stress. Because journaling is proven by research to bring several health benefits in addition to stress relief, this stress reliever is highly recommended.

5. **Meditation.** Meditation brings short-term stress relief as well as lasting stress management benefits. There are many different forms of meditation to try--each one is unique and brings its own appeal.

6. **PMR.** Progressive muscle relaxation, or PMR, is a technique that allows you to relax all of the muscles in your body, group by group. Beginning sessions take several minutes, and allow you to feel physically and emotionally relaxed when done. With practice, you can achieve full-body relaxation within seconds.

7. **Yoga.** Yoga incorporates breathing exercises, meditation, and light exercise. One session brings initial stress relief, and continued practice brings greater resilience to stress. It's one of the most potential stress relievers.

8. **Breathing.** Breathing exercises provide convenient and simple stress relief in that they can be used anytime, anywhere, and they work quickly.

9. **Playing Games.** Enjoying a good game with a group of friends, or playing something relaxing online can take your mind off of your stressors, and can lead to a more relaxed state. Games are stress relievers that work well because people enjoy them enough to use them regularly.

10. **Sex.** Within a healthy relationship, sex can be a fantastic stress reliever, as it incorporates several other stress relief ingredients--breathing, touch, social connection, and a few others--and brings a rush of endorphins and other beneficial chemicals with orgasm. It's another one of the more "fun" stress relievers that can also be quite effective.

11. **Laughter.** The physical act of laughing releases tension and brings positive physiological changes. Finding ways to work more laughter into your day can be an effective route to stress relief.

12. **Biofeedback.** While biofeedback requires some special equipment, this stress relief technique can allow you to become more aware of and consciously alter the physiological changes that come with stress. By using your mind to relax your body, you can relax your mind to a greater degree as well, creating a positive feedback loop.

13. **Music Therapy.** Music can alter your physiology in ways that help you to relieve stress. It's an enjoyable, passive route to stress relief. Formal music therapy sessions can help with a variety of stress-related issues.

14. **Take a Walk.** Exercise is a fantastic stress reliever that can work in minutes. Taking a walk allows you to enjoy a change in scenery, which can get you into a different frame of mind, and brings the benefits of exercise as well.

15. **Plant a Garden.** Getting outside and enjoying the scenery is just one of the ways that gardening can contribute to stress relief.

16. **Time Management.** Honing your time management skills can allow you to minimize the stressors that you experience, and better manage the ones you can't avoid. When you are able to complete everything on your "to do" list without the stress of rushing or forgetting, your whole life feels easier.

17. **Listen To Music.** Finding a music therapist isn't the only way music can help as a stress reliever. Creating playlists for various moods can help you to relieve stress passively, enjoyably, and conveniently.

18. **Eat a Balanced Diet.** A poor diet can bring greater reactivity toward stress. A healthy diet can bring greater physical and emotional wellness. Find some simple go-to meals and snacks, and feel less stressed in your daily life.

19. **Learn Assertive Communication Skills.** Relationships can be great stress relievers. Knowing how to keep your relationships healthy through effective communication is one of the best investments of time and energy for stress relief.

20. **Enjoy Aromatherapy.** Aromatherapy has proven benefits for stress relief--it can help you to become energized, more relaxed, or more present.

21. **Reduce Caffeine Intake.** Consuming caffeine too late in the day can affect sleep quality, which impacts stress levels. Consuming too much caffeine in general can make you more emotionally reactive to stress.

22. **Drink in Moderation.** Speaking of knowing limits, maintaining careful limits with alcohol is particularly important. One glass of red wine at the end of the day can bring relaxation, but too much alcohol can obviously bring a host of other problems.

23. **Don't Procrastinate.** Putting off a stressful or labor-intensive project can only increase the stress you experience.

24. **Drink Green Tea.** Sitting with a glass of green tea and planning for the day ahead, or reflecting on the day behind can provide you with a nice break and a taste of peace. You'll experience the health benefits of green tea as well.

Some more great stress relievers for everyone are:

- Throw On Some Music and Clean House
- Watch Aquarium Fish
- Take a Walk With A Friend
- Sing Along With Music
- Set Up a Home Spa
- Play Positive Affirmations Hangman

- Walk Your Dog
- Try Breathing Exercises
- Draw a Picture
- Dance to Your Favorite Music
- Work on Becoming An Optimist
- Try Focused Meditation
- Decode a Cryptogram Puzzle
- Take a Mini-Vacation
- Keep a Gratitude Journal
- Play Music and Cook Something Wonderful
- Surround Yourself with Positive Energy
- Learn to Say No To Demands on Your Time
- Take a Nap
- Get Daily Stress Tips
- Reduce Stress At Your Job

TEXT 27. **USING POSITIVE PSYCHOLOGY FOR STRESS MANAGEMENT**

Positive psychology can help you create a life of greater happiness and less stress.

What is Positive Psychology? Positive Psychology is a newer and increasingly popular branch of psychology that seeks to focus not on pathology, but on what contributes to human happiness and emotional health. It focuses on strengths, virtues, and factors that help people thrive and achieve a sense of fulfillment, as well as more effectively manage stress.

History of Positive Psychology The Positive Psychology movement has its roots in the work of humanistic psychologists such as Abraham Maslow, who tried to focus more on healthy human development and less on pathology, but really

came into being as we know it around 1998. It was primarily founded by psychologist Martin Seligman, who made it the focus of his American Psychological Association presidency and inspired others to contribute to this growing area of study. For Seligman, it became clear that there must be a new branch of psychology when he thought of how he wanted to raise his young daughter. He knew much more about what causes pathology and how to correct that, than he knew about how to nurture strength, resilience and emotional health. This had been a greatly under-studied area of research, so it became his primary focus.

Focus of Positive Psychology Positive Psychology aims to discover what makes us thrive. It looks at questions like, 'What contributes to happiness?', 'What are the health effects of positive emotions?' and, 'What habits and actions can build personal resilience?'

So far, they've found some wonderful things. For example, it's well-documented that negative emotions like anger, anxiety, and sadness can impact our health in negative ways, such as triggering our stress response and contributing to chronic stress, making us more susceptible to cardiovascular disease. But Positive Psychology research has now found that positive emotions can aid health by undoing the physical reactivity that can lead to these problems.

Using Positive Psychology for Stress Management Positive Psychology has so far identified several positive emotional states that can contribute to greater emotional resilience, health and fulfillment. Some are listed below. Click on each to learn more about them and start adding them to your life.

Gratitude. Appreciating what one has in life can lead to more satisfaction and happiness. Both having what you want and wanting what you have can lead to a sense of gratitude, as can specific exercises such as maintaining a gratitude journal.

Optimism. We tend to have a natural tendency toward optimism or pessimism, but that's just part of our potential. We can work on developing more

of a tendency toward optimism if we choose. And, given that optimists see many benefits in life, this is something to work toward!

Flow. Losing track of time when you're absorbed in fulfilling work or another engaging activity, 'flow' is a familiar state for most of us. And most of us don't get enough of it!

Mindfulness. A state of being characterized by being fully present in the 'now', without trying to make anything different, mindfulness actually takes some practice for most people, but brings wonderful benefits as well.

Spirituality. Whatever the path, a focus on spirituality can lead to a greater sense of meaning in life, as well as greater resilience in the face of stress.

TEXT 28. HOW TO PUT THE POSITIVE PSYCHOLOGY APPROACH TO LIFE INTO PRACTICE

When I watched the movie 'Eat, Pray, Love', couldn't help but notice how this movie about finding personal fulfillment is in line with the Positive psychology approach to stress relief. Positive Psychology is a relatively new branch of psychology that takes a break from the focus on pathology, and instead studies what makes life meaningful, what brings happiness, and what promotes mental health. Research and thinking in Positive Psychology holds that there are three paths we take to feeling good and creating happiness in our lives: pleasures, gratifications, and meaningful activities. And, yes, they correspond nicely with eating, praying and loving.

Pleasures, according to the positive psychology approach, are activities that delight the senses, make us feel better easily and in the moment, and take no effort to enjoy. The act of eating delicious food is a pleasure--it feels good, and anyone can enjoy it. (The downside of pleasures is that their effectiveness diminishes over time.)

Gratifications are activities that use our strengths, challenge us in just the right way, and lead to the experience of flow. Gratifications don't have the same ease as do pleasures--they take some effort--but their impact grows with usage,

rather than diminishing. Much of what creates a healthy love relationship can be classified in the realm of gratification: listening well, performing kind acts, and doing other things for our beloved. That's not to say that love is just one big gratification, and that all gratifications are based in love, but there is a correlation there, definitely.

The third main path to happiness studied by positive psychology is meaningful activity. By committing ourselves to activities that promote meaning in our lives, we can achieve the greatest feelings of fulfillment, both professionally and personally. This can apply to spirituality, prayer, and other spiritually-focused activities, as well as other activities we do to instill meaning in our lives. Perhaps that's why research on spirituality shows that those whose lives contain spirituality tend to have more positive health outcomes, are more fulfilled and have a buffer against stress.

So how can people like you and me--people who don't have time to take a year-long sabbatical--bring a little Eat, Pray Love into our lives? Below are some ideas:

Meditate. In the movie, the main character begins a practice of meditation every morning. This is a wonderful way to relieve stress, and can bring health benefits and meaning to life as well. Regular practitioners find greater resilience toward stress over time. If you don't have time for a trip to India right now, you can start a meditation practice in your own home, or find a meditation group in your community.

Eat Well. You may not be able to take a tasting trip around Italy, but you can try new food once a week at local restaurants, experiment with healthy or gourmet cooking, or take a cooking class to get your fix for fine food. Because what you eat can impact your stress levels and make you feel good in the moment, eating sensible portions of really delicious (and nutritious) food in your own hometown can be a very pleasurable experience, and can take the edge off of stress.

Make New Friends. Take a class, join a club, get to know your neighbors, or just start talking to the people around you more. (Or listen to them more!) Being open to new people and new experiences can bring personal growth and fulfillment, and provide resources against stress.

Focus on Spirituality. If you have a spiritual tradition that you've been neglecting, or if you've been wondering if you should pursue spirituality in your life, start putting a spiritual practice in place in your life. Go to services, read books to deepen your spirituality, or start praying before bed, if you aren't already.

Try Something New. Unless you're under tremendous stress, new challenges can help you to feel vital and alive. Take on a new hobby, start a new practice, expose yourself to new things. This could be a great route to stress relief and personal fulfillment for you.

PART II. VOCABULARY STUDY

UNIT 1.

1. Practise reading the following words

Behavior, structure, individual, function, selection, identify, systematic, collection, test, universal, application, objective, subjective, reaction, principle, concept, special, characteristic, basic, extremely, speculation, accumulation, status, doctrine, discipline.

2. Form nouns with –ist and –ical and translate

Psychology, physiology, biology, sociology, cardiology

3. Translate the following word combinations and sentences into your native language

- He behaved badly at the lesson. To study the behavior of man; Bill, behave yourself! People **behave** differently in this situation. What can you say about his behavior?
- **To deal with** animals; to deal with man's behavior; to deal with the selection of animals for the experiment;
- **To apply** the results of the experiment to practice; to apply a new method; an application of new methods; an application of natural selection; the application of law;
- Good **conditions**; under difficult conditions; to study their life conditions;
- Natural **environment;** artificial environment; to study environmental conditions;
- The subjective **approach** to the problem; the objective approach to the problem; an artificial approach;
- The results will **depend on** our approach to the problem. We are dependent on our environment. To study the dependence of one's behavior on the environmental conditions;
- Our behavior depends on our **past experience**. To study one's past experience;

- **To contribute** to the investigation of the problem; to contribute to the development of psychology; to make an important contribution to the field of general psychology;
- **Random** behavior; a random search for food; non-random selection;
- Class **consciousness**; to be conscious of the environment; to lose consciousness;
- **To survive** under unfavorable conditions; he was the only survivor after the terrible storm; only the strongest among animals survive;
- **To adjust** to the environmental conditions; His adjustment to new work conditions was very slow.

4.Translate into English

1. Мы изучали поведение животных в разных условиях. 2. Ученый провел этот эксперимент в очень трудных условиях. 3. Психологи имеют дело с субъективным человеческим опытом. 4. Ученый применил новый метод к своему исследованию. 5. Применение нового метода дало хорошие результаты. 6. Поведение зависит от окружающей среды. 7. Такой подход к проблеме очень интересен. 8. Новый подход к проблеме дал очень важные результаты. 9. Наши выводы будут зависеть от результатов этого эксперимента. 10. Опыт помогает нам приспособиться к условиям окружающей среды. 11. Эта дискуссия содействовала решению многих теоретических проблем. 12. Способность приспосабливаться к окружающей среде находится в тесной зависимости от возраста. 13. Вклад Павлова в развитие физиологии хорошо известен. 14. Ученые получили новые свидетельства зависимости животных от окружающей среды. 15. Во время эксперимента испытуемый вёл себя спокойно.

UNIT 2.

1. Practise reading the following words

Scientific, appreciable, reliable, efficient, environment, consciousness, previously, eventually

2. Form the verbs from the following nouns and give their meanings

Specialization, organization, generalization, stabilization, mechanization, recognition, cognition, qualification, identification, specification, modification, application, contribution, correction, description, reception, perception, investigation, negation, direction, selection, distortion, connection, examination, definition, stimulation, imagination, action, concentration, impression, transmission, protection, collection, complication, information, consideration, explanation, observation, suggestion, reproduction, foundation

3. Translate the following word combinations and sentences into your native language

- **To distinguish** the normal behavior from the disturbed one; to distinguish the natural observation method from the experiment; I can't distinguish between two definitions.
- The **ability** to communicate in English; the ability to remember figures; the ability to think in an abstract way;
- **To be able to** discover different nerve fibres; to be able to remember facts; to be able to apply the natural observation method to this investigation; to be unable to behave in natural way;
- **Cognition** of the world around us; to deal with the problem of cognition;
- A **sense** organ; we have five main senses; one of our senses is the sense of hearing; our sensation is the first stage of cognition;
- To have good **taste**; to lose the sense of taste; the tongue is the sense organ of taste; to taste the cake;

- The object is very cold to the **touch**; he has a well-developed sense of touch; the **smell** of this medicine is unpleasant; the nose is the sense organ of smell; he has a good sense of **hearing**; he was within hearing distance; he lost his hearing during the war;
- He has bad **sight** and has to wear glasses; he is short-sighted; the object is in sight; he is out of sight;
- **To supply** the laboratory with all the necessary equipment; to supply future psychologists with all the necessary knowledge; we haven't got enough supplies to stay here any longer;
- **The quality** of equipment; the quality of information; the quality of sound; the quality of light;
- The animal did not **respond** to the sight of food. The response was unexpected. Pavlov's studied dogs' responses to the sight of food. The response depends on several factors.

3.Translate into English

1. Он не может отличить одно понятие от другого.
2. Человек способен мыслить.
3. Ощущения играют очень важную роль в жизни человека.
4. Качество работы зависит от нас.
5. Ощущения – реакция нервной системы на какой-либо раздражитель.
6. Органы чувств снабжают нас разнообразными сведениями об окружающей среде.
7. Мы изучали реакцию животных на вид пищи.
8. Различные отделы мозга принимают информацию от определенных органов чувств.
9. Университет дает нам знания, необходимые для будущей работы.

UNIT 3.

1. **Form nouns from the following verbs**

To love, to smell, to touch, to taste, to show, to break, to swim, to shock, to pay, to catch, to sleep, to reply, to light, to pause, to press, to report, to review, to fight, to rain, to pass

2. **Translate the following sentences and word groups**

- **Perception** of color; visual perception; to perceive movement; to perceive form; we perceive those parts of the environment that interest us
- **To be aware of** the world around us; to be aware of noise; to be unaware of hunger; to be aware of the artificial conditions of the experiment; awareness of difficulties
- **To influence** the results of the experiment; to influence the animal's behavior; the influence of one's past experience on development; the influence of one's knowledge of the subject
- **To inherit** good sight; inherited qualities; inherited behavior; to study the role of inheritance
- **To affect** one's perception; to affect one's hearing; to affect one's ability to understand the problem; to affect the course of the experiment
- **To determine** experimental conditions; to determine human activities; determination of the effect of a medicine on a patient;
- **To distort** visual perception; to distort evidence; to distort the results obtained; perceptual distortion;
- **The total** number of persons; the total population; the total sum;
- **Relationship** between children and parents**; relations** between the experimenter and his subjects;
- Let's **consider** the problem; all the aspects of the problem were considered in the course of the discussion; to take into consideration the possibility of some visual distortion; the question will be under consideration next time;
- **To aid** the investigation; to ask for aid;

- **To measure** the distance; to measure the animal; take the measurements of its brain; the psychometric methods are procedures for psychological measurements; measurements means the description of data in terms of numbers.

3. Translate into English

1. Мы воспринимаем окружающий нас мир посредством органов чувств. 2. Испытуемый не осознавал присутствие экспериментатора. 3. Бихевиоризм оказал большое влияние на психологию Запада. 4. Наследственность – важный фактор, который должен учитываться психологами. 5. Прошлый опыт, наследственность, окружающая среда и другие факторы влияют на восприятие. 6. Внешние условия не полностью предопределяют поведение человека. 7. Определение времени реакции было основной задачей нашего эксперимента. 8. Зрительные иллюзии – это искажения в зрительных восприятиях. 9. Общее число испытуемых в нашем эксперименте – 20. 10. Итоговые цифры будут приведены в конце статьи. 11. Мы должны определить время реакции 3 человек. 12. Человек сам влияет на окружающий мир.

UNIT 4.

1. Practise reading the following words

To initiate, event, to associate, sign, procedure, digestion, reflex, to signify, approximately, eventually sequence uncertainty, trial, spontaneous, accidentally, essentially, reward, scheme, previous.

2. Give the verbs which the nouns are derived from

Development, employment, movement, achievement, reinforcement, excitement, punishment, fulfillment, treatment, agreement

3. Translate the following sentences and word groups

- to present a stimulus; to present several figures; at the first presentation; presentation of several objects; to present 2 stimuli at the same time; a conditioned stimulus;

- An **attempt** to contribute to the investigation of the problem;
- **to discover** some dependence of perception on learning experience; to discover the influence of the environmental conditions on one's behavior; the discovery of visual illusions;
- the **response** occur at the sight of food; the event occurs quite often;
- **inborn** qualities; an inborn ability to do smth;
- **to acquire** knowledge; to acquire new habits; to acquire conditioned reflexes; to acquire the ability to perceive things at a single presentation;
- a **complicated** problem; a complicated structure of human organism;
- a **sequence** of events; a sequence of stimuli; to remember the sequence of sounds;
- **to diminish** the difference; to diminish the results of the measurements; to diminish the influence of the inborn characteristics; to diminish the importance of the discovery;
- **to eliminate** a habit; to eliminate the difference between them; to eliminate the distortion; to eliminate a conditioned response;
- to **define** the word; a definition of scientific method of investigation; a definition of psychology as a science;
- **to perform** an experiment; the animal's performance in artificial environment;
- a low **level** of knowledge; at the reflex level; partial reinforcement; occasional reinforcement;
- **a trial** to memorize all the objects at a single presentation; a trial to determine the reaction time; a trial to measure visual perception;
- **to avoid** punishment; to avoid making mistakes; to avoid errors; avoidance of unpleasant emotions;
- **to punish** the boy for missing the lesson; to punish children for bad behavior; physical punishment; moral punishment;
- experiments on memory; **to memorize** events; to memorize data; to memorize figures;
- **to refer** to some laboratory data; to refer to some scientists who have investigated the problem;

- it’s necessary **to solve** the task as soon as possible; to solve the problem we must carry out a number of experiments; the solution to the problem is of great importance;
- to achieve **a goal**; to enter the University was his goal

4. Translate into English

1. Испытуемому предъявили 8 предметов разного цвета и формы. 2. Испытуемый запомнил 5 предметов с первого предъявления. 3. Этот эксперимент представляет большую трудность для нас. 4. Первый ответ был (произошел) случайным. 5. Нужно отличать врожденные рефлексы от приобретенных. 6. Дети способны усваивать абстрактные понятия в раннем детстве. 7. Условные рефлексы формируются на базе безусловных. 8. Различие в данных у разных испытуемых объяснялось разницей во времени восприятия. 9. После завершения опытов пришлось провести сложные измерения. 10. В ходе опыта экспериментаторы соблюдали строгую последовательность предъявления объектов. 11. От опыта к опыту внимание ослабевало. 12. Дайте определение экспериментального метода. 13. В последнее время наши психологи собрали много интересных данных по данной проблеме. 14. Научение – это приобретение знаний и навыков. 15. На поведение могут влиять привычки, приобретенные в течение жизни индивида. 16. Сначала пришлось определить уровень развития способностей наших испытуемых. 17. Он провел исследование на очень высоком уровне. 18. У этого студента очень низкий уровень знаний. 19. К следующему уроку надо запомнить 25 слов. 20. Память меняется с возрастом. 21. В памяти хранится прошлый опыт. 22. Первая попытка была неудачной. 23. Докладчик сослался на последние экспериментальные данные. 24. Автор статьи делал ссылки на многих зарубежных исследователей. 25. Чтобы решить эту проблему, надо провести многочисленные экспериментальные исследования.

UNIT 5

1. Practise reading the following words

Partial, threat, anxiety, actually, external, accentuate, convergent, divergent; nervous, various, obvious, curious, serious, famous, tremendous, spontaneous, conscious, monotonous, simultaneous, dangerous, desirous.

2. Translate the following sentences and word groups

- **Occasional** reinforcement, occasional repletion, occasional presentation
- **Partial** learning, partial remembering;
- **Constant** error, constant number, constant reinforcement;
- **To make an effort** to memorize a poem, to make an effort to achieve a goal; to make an effort to get a reward;
- **The transfer** of meaning, the transfer from internal to external speech;
- Cause of one's **anxiety**; he fell ill because of constant anxiety, anxiety influenced his performance;
- **To excite** interest, to excite desire, to be excited before the experiment, a cause of excitement;
- **External (internal**) factors, external (internal) influence, external (internal) development;
- To acquire new **skills**; practical skills; to form new skills
- **Similar** objects, similar living conditions, similar skills, similar habits, similarity of behavior, similarity of tastes
- The characteristic **features** of natural language, features of temperament, features of character

3. Translate into English

1. Время от времени причиной такого поведения может быть беспокойство испытуемых. 2. Лабораторные условия могут быть причиной искажения полученных данных. 3. В этом случае даже частичное достижение цели было большим успехом. 4. Изучение механизма памяти связано с вопросом о частичном или полном

забывании. 5. Необходимо определить постоянную ошибку. 6. Чтобы провести этот эксперимент, не потребуется много усилий. 7. При втором предъявлении испытуемый показал лучшие результаты. 8.Новая методика измерений вызвала общий интерес. 9. При определении причин надо учитывать как внутренние, так и внешние факторы. 10. Психолога интересует влияние внешнего мира на внутренний мир человека, его мысли и чувства. 11. Для опыта было отобрано 6 предметов, сходных по цвету и форме. 12. Вторая серия экспериментов дала результаты, сходные с результатами первой серии.

UNIT 6.

1. **Practise reading of the following words**

Intimately, analogous, equal, label, spinal, efficiency, infer, criteria, habitual, connotive, valuatively

2. **Form the adjectives from the given nouns**

Awareness, newness, quickness, sleepiness, bigness, blindness, usefulness, seriousness, unexpectedness, darkness, nervousness, correctness

3. **Translate the following sentences and word groups**

- **To retain** information, to retain knowledge, to retain the exciting news, the mechanism of retention;
- **To store** facts, to store data, the brain is the place where a great deal of information is stored; storage capacity; to have good intellectual capacity; our memory has a great storage capacity
- **Efficiency** in performance, efficiency in memorizing facts and figures
- **Recent** events, a recent experiment
- **To value** one’s views; to value one’s opinion; valuable facts; valuable data; valuable information

- **To involve** new data; to involve one's consciousness; to involve one's memory; to involve thinking
- **The image** of the world around us; image memory; a visual image
- To study **the pattern** of one's behavior; to influence one's pattern of thinking; to depend on the pattern of memorizing new data; the pattern of movement

4. Translate into English

1. Мы удерживаем в памяти только часть получаемой информации. 2. Сохранение в памяти многочисленной информации – чрезвычайно сложный процесс. 3. В памяти хранятся наиболее важные сведения. 4. У разных людей различный объем памяти. 5. Новые эффективные методы обучения нашли широкое применение в школе. 6. Следует проверить эффективность этого метода. 7. Новизна – одна из особенностей памяти. 8. Ваш ценный опыт окажет нам большую помощь в решении этого вопроса. 9. Огромна ценность экспериментального метода для психолога. 10. Данная проблема включает несколько отдельных вопросов, которые следует рассматривать один за другим. 11. Изучение модели поведения обезьяны дало интересные результаты.

UNIT 7

1. Practise reading of the following words

Potential, species, trait, to contend, to nurture, to mature, creature, sociability, survival, distinct, to mould, community, consequence

2. **Form adjectives from the following verbs with the help of suffix –able.**

To adjust, to drink, to digest, to depend, to excite, to move, to laugh, to notice

3. **Translate the following sentences and word groups**

- **Rate** of growth; rate of development; at the rate of 7 presentations per 10 minutes;

- To investigate the problem of **heredity**; to pay attention to heredity; heredity is one of the factors that determine our growth and development
- Some **adults** can't understand children; 5 adults were chosen for tests; difficult adulthood
- I am not **concern**ed with the problem; the investigator was concerned with the behavior of his subjects; concerning the problem of heredity our views differ;
- To measure one's **height** and weight; to grow in height and weight; they are of the same height

4. Translate into English

1. Умственные способности изменяются с возрастом с одинаковой скоростью у мужчин и женщин. 2. Наследственность – это один из факторов, который определяет наше взросление и развитие. 3. Научное изучение процесса старения – довольно новое направление в исследованиях. 4. Психолога интересует поведение человека и животных. 5. Многие более ранние работы касались вопроса восприятия цвета. 6. Несколько подростков были отобраны для эксперимента. 7. Все испытуемые были среднего роста и нормального веса. 8. До начала эксперимента всех животных осмотрели, измерили их рост и вес.

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